ORIGINAL OPERATING INSTRUCTIONS
PEDELEC BOSCH

GHOST®
GERMAN BICYCLE TECHNOLOGY

Original Operating Instructions

for GHOST EPACs of the Models

- **E-HYBRIDE CROSS 4000 MAN/LADY**
- **E-HYBRIDE CROSS 9000 MAN/LADY**
- **E-HYBRIDE TREKKING 4000 MAN/LADY**
- **E-HYBRIDE TREKKING 9000 MAN/LADY**
- **E-HYBRIDE WAVE 4000**
- **E-HYBRIDE WAVE 9000**

CE

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1 Fundamental Information on your new EPAC and this Operating Manual 6

1.1 Scope of Delivery 6
1.1.1 Basic equipment 6
1.1.2 Optional accessories for installation by the specialist bicycle dealer 6
1.2 Other applicable documents 6
1.3 Legal regulations 6
1.4 Conventions 7
1.4.1 Symbols and signal words 7
1.4.2 Abbreviations 7
1.4.3 Technical terms 8
1.4.4 Representation 9

2 For Your Safety 10

2.1 Follow the instructions in this operating manual 10
2.2 Consulting your specialist bicycle dealer 10
2.3 The meaning of the markings on your EPAC 10
2.4 Using your EPAC for its intended purpose 10
2.4.1 What work may you carry out yourself on your EPAC? 11
2.4.2 What must you bear in mind when retrofitting accessories and carrying out conversions? 11
2.4.3 Who is allowed to ride your EPAC? 12
2.4.4 Where are you allowed to ride your EPAC? 13
2.5 Residual dangers 13
2.5.1 Danger of burns 13
2.5.2 Electric hazards 14
2.5.3 Other hazards and protective measures 14

3 Technical data 16

4 Construction and Function 18

4.1 Brakes and brake assignment 19
4.2 Gears 19
4.3 Frame and fork 19
4.4 Wheels 20
4.5 Electrical equipment 21

5 Before your First Ride 22

6 Before Every Use 23

6.1 Checking the Wheels 23
6.1.1 Checking the tightness 23
6.1.2 Checking the tyres 24
6.1.2.1 Checking the position of the valve 24
6.1.2.2 Checking the tyres 25
6.1.2.3 Checking the air pressure 25
6.1.2.4 Checking that the tyre is correctly fitted 26

6.1.3 Checking other points....26
6.2 Checking the Saddle, Seat Post....27
6.3 Inspecting the handlebars and handlebar stem....28
6.4 Inspecting the handlebar attachments....29
6.5 Inspecting the headset....29
6.6 Checking the Suspension Fork (if present)....30
6.7 Inspecting the brakes....30
6.7.1 Checking general functions....30
6.7.2 Checking the hydraulic disc brake....31
6.8 Inspecting the drive and chain....32
6.9 Checking the Lights (if present)....32
6.10 Inspecting the luggage rack (if present)....33
6.11 Checking the side stands (if present)....33
6.12 Checking the drive electrical system....34
6.13 Checking other points....34

7 Adjusting the EPAC....35

7.1 Adjusting the saddle position....35
7.2 Adjusting the saddle height....35
7.3 Adjusting the spring fork (if present)....35
7.3.1 Adjusting the hardness of the spring....36
7.3.2 Adjusting the air pressure....36
7.3.3 Switching off the suspension....37

8 Operating the EPAC....38

8.1 Electric drive....38
8.2 Gears....38
8.2.1 Switching to a larger sprocket:....39
8.2.2 Switching to a smaller sprocket:....39
8.3 Brakes....39
8.4 Quick-release axles....40
8.4.1 Opening, closing the quick-release axles....40
8.4.2 Opening and closing the quick-release axle on the seat post clamp....44

9 Loading the EPAC....46

10 Riding the EPAC....48

10.1 Switching on the electric drive....49
10.2 Riding the EPAC....49
10.3 Switching off the electric drive....49

11 What to do in the case of a fall or accident....50

12 Parking the EPAC safely....51

13 Transporting the EPAC....52

13.1 Assembling and dismantling the wheels....52

13.1.1 Dismantling the front wheel 53
13.1.2 Install the front wheel 54
13.1.3 Dismantling the rear wheel 56
13.1.4 Install the rear wheel 57
13.2 Installing and dismantling the saddle post with the saddle 58
13.2.1 Dismantling the seat post 58
13.2.2 Installing the saddle post 59

14 Maintaining the EPAC 63

14.1 Your servicing and maintenance plan 63
14.2 How to clean and care for your EPAC 64
14.3 Workshop service 66

15 What to do in the case of faults 67

15.1 Gear shift, drive 68
15.2 Brakes 70
15.3 Frame, Saddle Post and Suspension 70
15.4 Luggage rack and lights 72
15.5 Wheels and tyres 72
15.5.1 Flat tyre 74
15.6 Electric drive 75

16 Taking the EPAC out of operation 77

17 Disposing of the EPAC 78

18 Appendix 79

18.1 Warranty 79
18.2 Guarantee 79
18.3 EC Declaration of Conformity 80
18.4 Illustrations 81

Dear Customer,

We wish to congratulate you on your choice of an EPAC from our company and thank you for the trust placed in us.

With your EPAC you have acquired a high-quality, environmentally-friendly sports model with which you will have a great deal of pleasure while at the same time doing something to improve your health.

1 Fundamental Information on your new EPAC and this Operating Manual

1.1 Scope of Delivery

1.1.1 Basic equipment

- **a complete bicycle with pedals**
- **a transport lock for the disc brake**
- **charging device**
- **operating manual in your national language.**

1.1.2 Optional accessories for installation by the specialist bicycle dealer

Please see *section 2.4.2, What must you bear in mind when retrofitting accessories and carrying out conversions?* to find out which optional accessories can be retrofitted to your EPAC.

1.2 Other applicable documents

- Delivery Certificate
  The delivery certificate is an important accompanying document which your specialist bicycle dealer has completed and handed over to you. This contains key data and other data about your EPAC. Your specialist bicycle dealer updates this document every time he works on your EPAC.

- Original Bosch operating instructions for the motor, display, battery and charger
  In the original Bosch operating instructions you will find important information about the components and how to handle the electric pedal assistance.

1.3 Legal regulations

As a road user you have to abide by the traffic regulations in your country.

In Germany do not need any official authorisation or driving licence for your EPAC.

On public roads and paths you are only allowed to ride your bicycle if you retrofit it with the equipment which is stipulated by law in your country. In Germany these requirements are laid down in the German Highway Code (StVZO).

NOTE:
Not all of the equipment required by law in Germany is included in the scope of delivery of the E-Hybride Cross models. Please contact your specialist bicycle dealer to retrofit these parts. He or she will be pleased to advise you.

1.4 Conventions

1.4.1 Symbols and signal words

⚠ **This draws your attention to how to deal with and the effects of safety information.**

⚠ **WARNING** **This draws your attention to a dangerous situation which might result in death or injury if it is not avoided.**

⚠ **CAUTION** **This draws your attention to a dangerous situation which might result in slight to moderate injury if it is not avoided.**

NOTE: *This draws your attention to possible damage to property and other important information.*

1.4.2 Abbreviations

°	Degrees, angular measure
A	Ampere, unit of current strength
AC	Alternating current
Ah	Ampere hour, unit of battery storage capacity
bar	Common unit of measure for air pressure
℃	Degrees Celsius, unit of temperature
DIN (German Industry Norm)	German Institute for Standardisation
EN	European norm
EPAC	**E**lectric **P**ower **A**ssisted **C**ycles, auch Pedelec (**ped**al **elec**tric) Bicycle with an additional electric drive which only operates when the driver also pedals at the same time.
h	Hour(s)
HWK	Chamber of Crafts (in Germany)
IHK	Chamber of Commerce and Industry (in Germany)
Sec.	Section
km/h	Kilometres per hour, unit of speed
kg	Kilogram, unit of mass
MTB	Mountain bike
Nm	Newton-metre, unit of torque
Pedelec	see **EPAC**
psi	**p**ound per **s**quare **i**nch; American unit for pressure; □(1 psi = 0.06897 bar)
RH	Frame height

StVO	German road traffic regulations (Highway Code)
StVZO	German Road Traffic Licensing Regulations
SW	Wrench size, measure of tool size
V	Volt, unit of electric tension
W	Watt, unit of electrical and mechanical power

1.4.3 Technical terms

Wobble	Colloquial term for radial eccentricity of the rim
Torque	also tightening torque. This states how much a screw should be tightened.
Specialist dealer / specialist workshop	A business which is authorised by the authorities and the manufacturer to call itself a specialist business for the sale and repair of conventional bicycles and GHOST EPACs.
Hand force	The force that an average adult can apply with moderate to average effort using one hand.
Manometer	Air pressure measuring device
Correctly tightened	Permanent screw connection in which the screw heads are positioned tightly against the component over their entire area.
Incorrect screw connection	A screw connection which is too loose and where the screw heads are not positioned tightly against the component over their entire area. This can generally be recognised by a gap between the screw head and component.

1.4.4 Representation

In this operating manual we use the following representation rules:

- **Safety instructions are shown with a symbol and signal word in bold - see *section 1.4.1, Symbols and signal words*.**
- **Instruction texts are numbered.**
- **Information and cross-references are in italics.**
- **Representations in illustrations are not specific to any particular model. They apply to all EPAC models in this operating manual.**
- **Definitions of positions**
  In this manual we use the following names for the position of objects in space (position information):
  The words left, right, front and rear always refer to the position in the direction of travel.

2 For Your Safety

2.1 Follow the instructions in this operating manual

⚠

- **Please make sure that your specialist bicycle dealer has completed the delivery certificate for your EPAC and that you have received all of the documents referred to in the delivery certificate.**
  - **You should contact your specialist bicycle dealer if any items are missing.**
  - **Please ride your EPAC only after you have received all of the documentation and read it carefully.**
- **You should always take this operating manual with you when riding and keep it protected against water and soiling. If your EPAC has a fault or malfunction, this operating manual contains important information.**
- **If you sell or give your EPAC to somebody as a present, you should also pass on this operating manual to the new owner.**

2.2 Consulting your specialist bicycle dealer

NOTE:
Even after providing advice and carrying out the final assembly, your specialist bike dealer is still very important to you. He or she is your contact person for all types of servicing and maintenance, conversions and repairs. Please contact your specialist bicycle dealer if you have any questions concerning your bicycle.

2.3 The meaning of the markings on your EPAC

This symbol means that your EPAC is subject to European Directive 2002/96/EC and means that you must dispose of your EPAC separately from the domestic waste by means of a return and collection system.

NOTE:
For details on disposal please refer to section 17, Disposing of the EPAC.

CE symbol on the type plate

This symbol means that your EPAC fulfils all fundamental safety requirements of the applicable European directives.

2.4 Using your EPAC for its intended purpose

⚠

If you do not use your EPAC in accordance with the designated purpose this may result in dangerous riding situations, falls and accidents. Another consequence may be internal

short-circuits in the rechargeable battery pack, causing the pack to catch fire. A damaged rechargeable battery pack can also cause a life-threatening electric shock.

You should always use your EPAC as described in this operating manual and any additional documentation that you may have.

2.4.1 What work may you carry out yourself on your EPAC?

⚠

Faults caused by incorrectly performed work to your EPAC may damage the EPAC and impair its operational safety. This can lead to dangerous riding situations, falls and accidents.

- **You may only carry out work to your EPAC which is described as such in this operating manual and for which you have the appropriate tools.**
- **Do not change the properties of individual components of your EPAC.**
- **All other work - including getting your EPAC ready to ride - may only be carried out by a specialist bicycle dealer whose staff participate in the training sessions for your EPAC. Ask your specialist workshop to show you their confirmation of participation in a training course for your EPAC to prove that they are qualified to carry out the work.**

2.4.2 What must you bear in mind when retrofitting accessories and carrying out conversions?

⚠

The retrofitting of accessories and performance of conversions which are not permitted for your EPAC may damage your EPAC and impair its operational safety. This can lead to dangerous riding situations, falls and accidents.

- **You should never retrofit your EPAC or carry out any conversions yourself.**
- **Always select the accessories and modification parts together with a specialist bicycle dealer who has been trained for your EPAC. When considering accessories and the associated additional weight, please always bear in mind the maximum permitted total weight of your EPAC.**
  The following accessories can be retrofitted:
  - **Equipment for riding the EPAC on public roads and paths in accordance with the regulations in force in your country, unless fitted as standard.**
  - **Click pedals**
  - **Luggage rack, unless fitted as standard.**
  - **Child seat if you are using a luggage rack which is authorised for a child seat. Please ask your specialist bicycle dealer He or she will be pleased to advise you.**
  - **Saddlebags if you are using a luggage rack which is authorised for saddlebags. Please ask your specialist bicycle dealer He or she will be pleased to advise you.**
- **You may have the following modifications carried out to your EPAC:**
  - **Saddle**
- **Always have accessories and modification parts mounted only by a specialist bicycle dealer who has been trained for your EPAC.**
- **Please ensure that you receive the documentation for your accessories and modification parts from your specialist bicycle dealer.**

- **Please ensure that your specialist bicycle dealer notes down in the delivery certificate which documentation you have received from him.**
- **Always take your delivery certificate with you if you purchase accessories and modification parts from your specialist bicycle dealer at a later time.**
- **Follow all of the safety instructions and specifications in the documentation for your accessories and modification parts.**

2.4.3 Who is allowed to ride your EPAC?

⚠

- **The rider must be at least 15 years old.**
- **The rider must be able to ride a bike, i.e. he/she must have the necessary basic knowledge about the use of a bike and the necessary feeling of balance to be able to steer and control an EPAC.**
- **The rider must be able to get on and off the EPAC safely when it is stationary. This applies in particular in the case of ergonomically adjusted saddles if the rider's feet cannot reach the ground when he or she is sitting down.**
- **The rider must be of the correct height for their EPAC and the maximum permitted loading weight must not be exceeded:**

	Correct height				**Max. perm. loading weight**
Frame height	-	**50 (M)**	**54 (L)**	**58 (XL)**	**(Rider + children + luggage)**
E-HYBRID CROSS/TREKKING	-	155-165 cm	165-180 cm	180-190 cm	115 kg
Frame height	**44 (S)**	**48 (M)**	**52 (L)**	**56 (XL)**	**(Rider + children + luggage)**
E-HYBRIDE CROSS Lady/ TREKKING Lady	145-155 cm	155-165 cm	165-180 cm	-	115 kg
E-HYBRIDE WAVE	145-155 cm	155-165 cm	165-180 cm	180-190 cm	115 kg

- **Physical and mental fitness**
  If the rider would like to ride on public roads and paths:
  the rider must be physically and mentally able to ride the bicycle on public roads.
  NOTE:
  Information on the technical conditions of approval for use on public roads can be found in section 1.3, Legal regulations.
- **Stamina**
  Your EPAC enables you to ride at high speeds for long periods. The rider must have enough stamina to be able to ride the EPAC safely for at least two hours.

- **Do not use your EPAC to compensate for physical infirmity or lack of fitness.**

NOTE:
Training to ride a bike can help you increase your riding safety and improve your riding technique. Ask your specialist bicycle dealer about offers near you.

2.4.4 Where are you allowed to ride your EPAC?

⚠
If you overload your EPAC by riding on roads, paths and slopes for which your EPAC is not suited it is possible that parts of your EPAC will break or fail. This can lead to dangerous riding situations, falls and accidents.

You should only ride your EPAC on roads, paths and slopes which are authorised for your model according to the following table.

NOTE:
The model name of your EPAC can be found on the frame or stated in the delivery certificate.

X = allowed - = not allowed	**Specification**	**E-HYBRID CROSS**	**E-HYBRIDE TREKKING**	**E-HYBRIDE WAVE**
Street	Asphalted surface			
- non-public		X	X	X
- public		X*	X	X
Path	Sand, gravel or similar surface e.g. forest road, field track			
- non-public		X	X	X
- public		X*	X	X
Paved long-distance footpath	on easy terrain with gentle to moderate slopes, no or few roots, verges, stones, kerbs, etc.	X	X	X
Jumps		-	-	-
Unpaved long-distance footpath	with roots, bumps, stones, ledges etc.	-	-	-
Role training equipment		-	-	-
Sports park	specially designated area for free riding, downhill, BMX and dirt	-	-	-
Downhill	Downhill rides at a high to very high speed and specifically designated slopes	-	-	-
Free riding	artistic and sporting use, rapid downhill riding in free terrain	-	-	-

X* Only with legally prescribed additional equipment, see section 1.3, Legal Requirements.

2.5 Residual dangers

2.5.1 Danger of burns

⚠
Strong vibrations through use of your EPAC which is not in accordance with the designated purpose, storage in an environment which is too hot (e.g. car interior in strong sunlight) and falls with your EPAC may lead to internal short-circuits in the rechargeable battery pack and therefore cause the rechargeable battery pack to catch fire.

- Using your EPAC for its intended purpose (see *section 2.4*).
- Store your EPAC only in rooms with an ambient temperature of between -10℃ and +50 ℃.
- Keep your EPAC away from sources of heat such as radiators, radiant heaters, ovens etc.
- If flames or smoke come out of the down tube you must immediately leave your EPAC where it is. Put out the fire with fire extinguishing equipment, if available.
- If there is a danger that the fire will spread to neighbouring items, call the fire brigade immediately.

2.5.2 Electric hazards

⚠
Through the use of an incorrect, damaged or broken charging device and mains cable you may receive a life-threatening electric shock.

A battery that is incorrectly charged or stored may begin to burn.

- You should only use the charging device supplied to charge up the rechargeable battery pack of your EPAC.
- Keep the charging device and EPAC away from children and animals.
- Avoid all contact between your charging device and water.
- Do not charge up the battery pack in bright sunlight.
  Keep the battery pack and charger away from sources of heat (e.g. radiators).
- You should only charge up your battery while you are supervising it.
- Under no circumstances must you use your charging device, or you must remove the mains plug immediately
  - **if the charging device is damaged in any way**
  - **if the insulation of the cables or one or more plug-in connections are damaged. In this case you may only touch the mains plug at a point where it is insulated. If necessary, turn off the corresponding fuse in your electricity distribution box.**
  - **if the charging device is unusually hot. However, the production of a small amount of heat by the charging device and battery is normal.**
  - **if you hear unusual noises (e.g. loud humming, hissing etc.)**
  - **if there are sparks when you switch the device on and off, plug it in or unplug it**
  - **if smoke is produced by the charging device or EPAC.**

2.5.3 Other hazards and protective measures

⚠
Rotating wheels can injure your hands and other parts of the body.

- Keep your hands and other parts of the body away from rotating wheels!
- Please ensure that any children sitting on mounted children's seats cannot come into contact with the rotating wheels.

3 Technical data

Model	E-HYBRIDE CROSS 4000 MAN/LADY	E-HYBRIDE CROSS 9000 MAN/LADY	E-HYBRIDE TREKKING 4000 MAN/LADY
Mechanical Data			
Frame	Aluminium	Aluminium	Aluminium
	MAN: M/L/XL (50, 54, 58 cm)	MAN: M/L/XL (50, 54, 58 cm)	MAN: M/L/XL (50, 54, 58 cm)
	LADY: S/M/L (44, 48, 52 cm)	LADY: S/M/L (44, 48, 52 cm)	LADY: S/M/L (44, 48, 52 cm)
Fork	RST Neon PLS TNL LO 60 mm	RST Vogue AIR TNL LO 60 mm	GHOST Light Alloy
Gear change	Shimano Deore SL	Shimano XT SL	Shimano XT 10-Speed
Dérailleur	Shimano XT 10-Speed	Shimano XT 10-Speed	Shimano XT 10-Speed
Front dérailleur	-	-	-
Number of gears	10	10	10
Brake	Tektro HDC 300	Shimano XT	Tektro HDC 300
Crank	Metropolis CK 602 38	Metropolis CK 602 38	Metropolis CK 602 38
No. of teeth chain rings	38	38	38
No. of teeth geared ring	11-36	11-36	11-36
Tyre size	28 x 1.75 (622-47)	28 x 1.75 (622-47)	28 x 1.75 (622-47)
Valve	Sclaverand valve	Sclaverand valve	Sclaverand valve
Prescribed tyre pressure	3.0 - 5.0 bar	3.0 - 5.0 bar	3.0 - 5.0 bar
Admissible ambient temperatures			
· Riding	-5 to +40℃	-5 to +40℃	-5 to +40℃
· Loading	0 to 40 ℃	0 to 40 ℃	0 to 40 ℃
· Storage	-10 to +50 ℃	-10 to +50 ℃	-10 to + 50 ℃
Weight	20.30 kg (44 cm)	19.80 kg (44 cm)	21.00 kg (44 cm)
Maximum permitted loading weight (rider + children + luggage)	115 kg	115 kg	115 kg
Saddle support	GHOST light SP-DC1 27.2 mm	GHOST light SP-DC1 27.2 mm	GHOST light SP-DC1 27.2 mm
- Type	rigid	rigid	rigid
- Connection	Saddle clamping	Saddle clamping	Saddle clamping
- Type of connection	Two screws	Two screws	Two screws
· Tightening torque	12 Nm	12 Nm	12 Nm
Electrical data			
Electric motor, type	Bosch Cruise	Bosch Cruise	Bosch Cruise
Power	250 W	250 W	250 W
maximum torque	50 Nm	50 Nm	50 Nm
Battery type	Bosch standard battery 300 Wh	Bosch standard battery 400 Wh	Bosch standard battery 300 Wh
Operating voltage	36 Volt	36 Volt	36 Volt
Battery capacity	8.2 Ah	11 Ah	8.2 Ah
charging device	Bosch 0275007905	Bosch 0275007905	Bosch 0275007905
· Supply voltage	207 - 264 V AC / 1,5 A / 47 - 63 Hz	207 - 264 V AC / 1,5 A / 47 - 63 Hz	207 - 264 V AC / 1,5 A / 47 - 63 Hz
· Charging current	42 V DC / 4 A	42 V DC / 4 A	42 V DC / 4 A
· Power consumption	200 W	200 W	200 W
Charging time	approx. 2.5 h	approx. 3.5 h	approx. 2.5 h
Display	Bosch Intuvia	Bosch Intuvia	Bosch Intuvia
Closing off of the pedalling support at	25 km/h	25 km/h	25 km/h

Model	E-HYBRIDE TREKKING 9000 MAN/LADY	E-HYBRIDE WAVE 4000	E-HYBRIDE WAVE 9000
Mechanical Data			
Frame	Aluminium	Aluminium	Aluminium
	MAN: M/L/XL (50, 54, 58 cm)	S/M/L/XL	S/M/L/XL
	LADY: S/M/L (44, 48, 52 cm)	(44, 48, 52, 56 cm)	(44, 48, 52, 56 cm)
Fork	GHOST Light Alloy	RST Neon MLO 60 mm	RST Vogue AIR TNL LO 60 mm
Gear change	Shimano XT 10-Speed	Shimano Deore SL	Shimano XT SL
Dérailleur	Shimano XT 10-Speed	Shimano XT 10-Speed	Shimano XT 10-Speed
Front dérailleur	-	-	-
Number of gears	10	10	10
Brake	Shimano XT	Tektro HDC 300	Shimano XT
Crank	Metropolis CK 602 38	Metropolis CK 602 38	Metropolis CK 602 38
No. of teeth chain rings	38	38	38
No. of teeth geared ring	11-36	11-36	11-36
Tyre size	28 x 1.75 (622-47)	28 x 1.75 (622-47)	28 x 1.75 (622-47)
Valve	*Sclaverand valve*	*Sclaverand valve*	*Sclaverand valve*
Prescribed tyre pressure	3.0 - 5.0 bar	3.0 - 5.0 bar	3.0 - 5.0 bar
Admissible ambient temperatures			
- Riding	-5 to +40℃	-5 to +40℃	-5 to +40℃
· Loading	0 to 40 ℃	0 to 40 ℃	0 to 40 ℃
· Storage	-10 to +50 ℃	-10 to +50 ℃	-10 to + 50 ℃
Weight	20.60 kg (44 cm)	21.20 kg (44 cm)	20.80 kg (44 cm)
Maximum permitted loading weight (rider + children + luggage)	115 kg	115 kg	115 kg
Saddle support	GHOST light SP-DC1 27.2 mm	GHOST light SP-DC1 27.2 mm	GHOST light SP-DC1 27.2 mm
- Type	rigid	rigid	rigid
- Connection	Saddle clamping	Saddle clamping	Saddle clamping
- Type of connection	Two screws	Two screws	Two screws
· Tightening torque	12 Nm	12 Nm	12 Nm
Electrical data			
Electric motor, type	Bosch Cruise	Bosch Cruise	Bosch Cruise
Power	250 W	250 W	250 W
maximum torque	50 Nm	50 Nm	50 Nm
Battery type	Bosch standard battery 400 Wh	Bosch luggage rack battery 300 Wh	Bosch luggage rack battery 400 Wh
Operating voltage	36 Volt	36 Volt	36 Volt
Battery capacity	11 Ah	8.2 Ah	11 Ah
charging device	Bosch 0275007905	Bosch 0275007905	Bosch 0275007905
· Supply voltage	207 - 264 V AC / 1,5 A / 47 - 63 Hz	207 - 264 V AC / 1,5 A / 47 - 63 Hz	207 - 264 V AC / 1,5 A / 47 - 63 Hz
· Charging current	42 V DC / 4 A	42 V DC / 4 A	42 V DC / 4 A
· Power consumption	200 W	200 W	200 W
Charging time	approx. 3.5 h	approx. 2.5 h	approx. 3.5 h
Display	Bosch Intuvia	Bosch Intuvia	Bosch Intuvia
Closing off of the pedalling support at	25 km/h	25 km/h	25 km/h

4 Construction and Function

Your bicycle is a so-called EPAC or pedelec. That is a bicycle whose electric motor helps you to pedal. The pedalling assistance switches on automatically as soon as you pedal and switches off automatically as soon as you stop pedalling.

The pedalling assistance switches on up to a maximum speed of 25 km/h. The degree of assistance provided by the electric motor is controlled by a device attached to the handlebars.

Model	**E-HYBRIDE CROSS 4000 MAN/LADY**	**E-HYBRIDE CROSS 9000 MAN/LADY**	**E-HYBRIDE TREKKING 4000 MAN/LADY**	**E-HYBRIDE TREKKING 9000 MAN/LADY**	**E-HYBRIDE WAVE 4000**	**E-HYBRIDE WAVE 9000**
Basic bicycle type: Cross (CR)	X	X	-	-	-	-
Bicycle basic type: Trekking (TR)	-	-	X	X	X	X
Motor in the frame (bottom bracket motor)	X	X	X	X	X	X
Battery pack on the down tube (removable)	X	X	X	X	-	-
Battery pack in the luggage rack (removable)	-	-	-	-	X	X
Display on the handlebars	X	X	X	X	X	X
10-speed derailleur	X	X	X	X	X	X
Front wheel fork with air suspension	-	X	-	-	-	X
Front fork with steel spring	X	-	-	-	X	-
Rigid front fork	-	-	X	X	-	-
Unsprung frame made of aluminium	X	X	X	X	X	X
Disc brakes	X	X	X	X	X	X
Pedals without click system	X	X	X	X	X	X
Kick stand	-	-	X	X	X	X
Bottle holder	-	-	-	-	-	-

4.1 Brakes and brake assignment

- **Your EPAC has one or two disc brakes which are independent of one another.**
- **The left-hand brake lever operates the front brake.**
- **The right-hand brake lever operates the rear brake.**
- **Please ride very defensively for as long as your braking system has not been run in.**
- **Run your brake in. The rule of thumb is: perform approximately 30 braking operations from a moderate speed (approx. 25 km/h) until you come to a standstill.**
- **Avoid long downhill riding for as long as your braking system has not been run in.**
- **As soon as your braking system has been run in, the braking force at your disposal is very strong. If you pull the brake lever too strongly, it is possible that the wheels will lock.**
- **If the front wheel blocks the EPAC may overturn.**

4.2 Gears

Your EPAC has a derailleur, a crankset with a chain ring and a geared ring with 10 individual cogs. You have 10 gears at your disposal. The gear assembly provides you with the optimum gear for every speed and makes it easier to climb hills, for example.

4.3 Frame and fork

Your EPAC has a rigid, unsprung main frame with integrated rigid fork or suspension fork. On the E-Hybride models of the Cross and Wave series the suspension of the fork can be almost completely blocked.

Frame of the men's bike:

Frame of the ladies' bike

Low step frame:

4.4 Wheels

NOTE:
A wheel/the wheels are also called the front and rear wheel(s).

Your wheel consists of

- **Hub**
- **Only on the rear wheel hub: geared ring, also called the cassette or sprocket cluster**
- **brake disc**
- **spokes**
- **rim**
- **tyres**
- **wheel reflectors (optional).**

On your EPAC the wheels are attached as follows.

- **with quick-release axle (for operation see *section 8.4.1*).**

4.5 Electrical equipment

The components of the electric pedal assistance and their operation are described in the enclosed Bosch original operating instructions.

5 Before your First Ride

⚠ WARNING Danger from serious falls and accidents
Your EPAC is pre-assembled before being shipped to your specialist bicycle dealer. Some of the safety-relevant parts are not yet sufficiently mounted. The final assembly of your EPAC has to be carried out by your specialist bicycle dealer, i.e. it has to be made safe to ride.

- Please make sure that your specialist bicycle dealer has completely filled in the "Inspection Checklist for the Handover" in the delivery certificate for your EPAC.

- You should only ride your EPAC if the sitting position is correct for you.

  - **Have your dealer adjust the correct saddle height and position for you.**
  - **Ask your specialist bicycle dealer to explain to you the technology included in your EPAC.**
  - **Protect your EPAC with spray wax.**
    See *section 14.2, How to clean and care for your EPAC*.
  - **Charge up the rechargeable battery pack completely.**
    See enclosed *Bosch original operating instructions.*
  - **Carry out the fine adjustment of the saddle height and saddle position yourself.**
    See *section 7.1, Adjusting the saddle position* and *section 7.2, Adjusting the saddle height.*

6 Before Every Use

⚠ WARNING Danger from serious falls and accidents
A EPAC that is not completely ready for safe operation can lead to dangerous riding situations, falls and accidents.

- Check that your EPAC is safe for use before every journey.
  Also consider the possibility that your EPAC may have fallen over or been manipulated by unknown persons while unsupervised.

- Memorise the correct condition of your EPAC when new so that you can later more easily recognise any deviations from the correct condition.
  NOTE:
  Photographs you take yourself can be helpful in this.

- Contact your dealer immediately if the inspection reveals faults of any kind. You may correct small defects yourself if the appropriate measures are described below.

- You should contact your specialist bicycle dealer immediately if the measures for rectifying the defect are not described, you cannot perform them yourself or if these measures do not correct the problems.

- You should only use your EPAC again when it has been made safe to operate.

⚠ WARNING Danger of injuries to fingers and arms, danger of accidents
During testing the EPAC might move off unexpectedly.
Please ensure that you turn off the electric drive before carrying out any checks on your EPAC.

- **Make sure that the electric drive is switched off.**
  See *attached Bosch original operating instructions.*
- **Perform a visual check of all fastening screws to ensure that they are all correctly attached.**
  See *section 1.4.3, Technical terms*.
- **Carry out a visual inspection of the entire EPAC for dents, cracks, deep scratches or other mechanical damage.**
- **If the check reveals any faults:**
  Contact your specialist bicycle dealer.

6.1 Checking the Wheels

6.1.1 Checking the tightness

1. Shake both wheels strongly at right angles to the direction of travel.
   - The wheels must not move in their mounting.
   - The quick-release lever must be closed
     See *section 8.4, Quick-release axles.*
   - No cracking or grinding noises should be heard.

6.1.2 Checking the tyres

6.1.2.1 Checking the position of the valve

As a result of stresses and strains and low tyre pressure, the tyre and inner tube can move on the rim and result in incorrect positioning of the valves. The valve base may tear off during the journey and result in a sudden loss of pressure in the tyre.

1. Remove the valve nut.
2. Check the valve position:
   The valves must be pointing towards the middle of the wheel.
   Correct valve position:

Incorrect valve position:

6.1.2.2 Checking the tyres

1. Inspect your tyres for visible signs of damage, foreign bodies and wear.
   - The tyre rubber must have its original profile over its whole surface.
   - The tyre fabric under the rubber layer must not be visible.
   - There must be no visible blisters or cracks.
2. Remove any foreign bodies (thorns, small stones, pieces of glass or similar items) by hand or carefully with a small screwdriver.
   Then check whether air is escaping.
   If air is leaking out, the inner tube has to be renewed. You may change the inner tube yourself. The instructions for this can be found in *section 15.5.1 , Flat tyre .*

6.1.2.3 Checking the air pressure

As a result of low tyre pressure

- **the tyre and inner tube may move on the rim and result in the incorrect positioning of the valves. The valve base may tear off during the journey and result in a sudden loss of pressure in the tyre.**
- **the tyre may come off the rim in curves.**
- **the likelihood of a breakdown is increased.**

NOTE:
The higher your body weight and the weight of the load, the higher the tyre inflation pressure has to be.

Guideline values can be found in the following table. Please note, however, that these values are only an approximate guide. If you have any questions, please contact your specialist bicycle dealer.

Please also pay attention to the minimum and maximum pressure stated on the tyre.

Load in kilograms	Air pressure in bar
50	3.0
60	3.3
70	3.6
80	3.9
90	4.2
100	4.5
115	5.00

1. Unscrew the dust cap from the valve.
   NOTE:
   Your EPAC is equipped with a Sclaverand valve.

2. Loosen the small retaining nut at the top of the valve
3. Check the air pressure with a suitable tyre pressure gauge or an air pump with pressure gauge.
   NOTE:
   If necessary, please ask your specialist bicycle dealer to show you how to use the pressure gauge.
   - If the air pressure is too low:
     increase the air pressure.
   - If the air pressure is too high:
     reduce the air pressure by letting air out through the valve.
   - Check the air pressure again.
4. Retighten the small retaining nut at the top of the valve.
5. Screw the dust cap back on to the valve.

NOTE:
A bike pump with pressure gauge allows you to check the inflation pressure while inflating. First allow a little air to escape from the tyre, then inflate to the required value.

6.1.2.4 Checking that the tyre is correctly fitted

1. Lift the front wheel.
2. Turn the front wheel by hand.
   The tyre must run smoothly.
   There must be no wobble or eccentricity.
3. Check the back wheel in the same way as the front wheel.

6.1.3 Checking other points

1. Check whether there are any other loose items such as twigs, substance residues or similar items in your wheels.

2. Remove such items carefully.
3. If you have had spoke reflectors fitted, check that these are firmly fitted in place.
4. If they are loose, please remove them completely.
5. Check whether your wheels have been damaged by these loose parts.

6.2 Checking the Saddle, Seat Post

⚠ WARNING Danger from serious falls
If the insertion depth of the seat post is too small, it may be released from the frame while you are riding and lead to dangerous situations, falls and accidents.
Pay attention to the correct insertion depth of the seat post, see also *section 7.2 and 8.4.*

1. Try to twist the saddle and post in the frame by hand.
   It must not be possible to twist the saddle and saddle post.

2. Try to move the saddle in its clamp with your hand by alternately pushing down and pulling up.
   The saddle must not move.

3. If the saddle and/or saddle post can be moved, tighten them (see *sections 7.1* and *8.4.2*).

6.3 Inspecting the handlebars and handlebar stem

⚠ WARNING Danger from falls and accidents
Incorrectly mounted or damaged handlebars and handlebar stems may result in dangerous riding situations, falls and accidents.

- If you discover damage to these parts or have any doubt about their integrity, you must not use your EPAC again under any circumstances.
- Contact an approved workshop immediately.

1. Perform a visual check of the stem and handlebars.
   - The handlebar stem must be parallel to the front wheel rim and
   - the handlebars at right angles to the stem.
2. Clamp the front wheel between your legs.
3. Grip the handlebars at both ends.
4. Try to twist the handlebars in both directions with your hands.
5. Try to twist the handlebars in the handlebar stem with your hands.

- None of the parts must twist or move.
- No cracking or grinding noises should be heard.

6.4 Inspecting the handlebar attachments

How to check the attachment of the gear lever, brake levers and grips:

1. Grip the front wheel firmly between your legs or hold the handlebars tightly with one hand.
2. Try to turn the brake levers with your other hand.

3. Try to turn the gear lever with your other hand.
4. If your EPAC has been retrofitted with a bell, try to twist this with light hand pressure.

- It must not be possible to move or twist any of the parts.
- No cracking or grinding noises should be heard.

6.5 Inspecting the headset

The headset is the mounting of the handlebar stem in the fork column. Via this mounting, steering movements are transmitted to the front fork.

1. Check your headset. It must be possible to steer the front wheel easily in both directions without backlash.
2. Stand alongside your EPAC and hold the handlebar grips with both hands.
3. Apply the front wheel brake and keep the brake applied.
4. Push your EPAC forward and back with short, jerky movements.

- The headset must not exhibit any play.
- No cracking must be heard or felt.
- No crunching noise may be heard.

5. Turn the handlebars with the front wheel several times to the left and right.
   - It must be possible to steer the front wheel easily in both directions without any play.
   - The handlebars must not lock in any position.
6. If the check reveals any faults:
   Contact your specialist bicycle dealer.

6.6 Checking the Suspension Fork (if present)

1. Apply the front wheel brake and keep the brake applied.
2. Press with your body weight onto the handlebars so that the spring fork is compressed.
3. The fork must move easily up and down.
4. No cracking or grinding noises should be heard.
5. Grip the front wheel between your legs and try to pull up the EPAC by the handlebars.
6. The standing tubes must not be released from the fork tubes or from the crown.

6.7 Inspecting the brakes

⚠ WARNING Danger from heavy falls
Failing brakes always result in dangerous riding situations, falls and accidents. A brake malfunction is a serious danger to safety.

- **Pay particular attention when checking your brake system.**
- **Under no circumstances should you continue using your EPAC if it has any defects. Contact your specialist workshop immediately if you discover any defects and the requirements specified in *sections 6.7.1 and 6.7.2* are not met.**

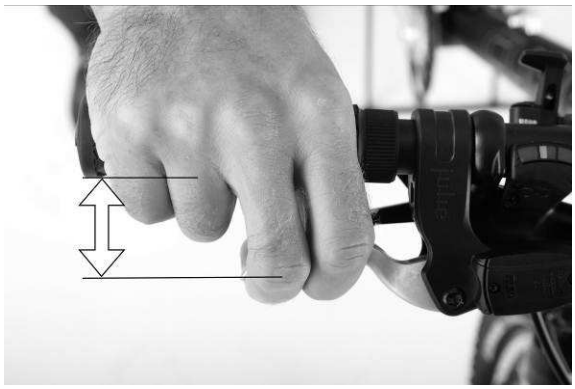
NOTE:
During prolonged tours over several days the brake disc and brake pads can become severely worn.

- *You should plan tours lasting several days in such a way that you can have any necessary servicing work carried out at specialist workshops.*
- *As a precaution you should carry brake linings for your brakes with you. If you do this you will avoid having to break off your tour if the specialist workshop does not have your type of brake linings currently in stock.*

6.7.1 Checking general functions

How to check the function of your braking system:

1. Pull on both brake levers completely with the bike at a standstill. The smallest distance between the brake lever and handlebar grip must be at least 10 mm.



2. Try to push the EPAC with both brakes applied.
Both wheels must remain locked.

6.7.2 Checking the hydraulic disc brake

⚠ WARNING Danger from falls and accidents
Oil and grease on the brake discs can reduce the braking effect and lead to dangerous riding situations, falls and accidents.

- Soiled brake discs must be cleaned immediately, see *section 14.2, How to clean and care for your EPAC .*

1. Pull the brake calliper alternately in all directions with your hands. The brake calliper must not move.

2. Pull the respective brake lever with the bike at a standstill and hold the brake lever in this position. The pressure point must not move.
3. Inspect the brake system visually from the brake lever along the lines up to the brakes. No hydraulic fluid should escape at any point.

4. Inspect the brake disc for damage. It must not exhibit any dents, cracks, deep scratches or other mechanical damage.
5. Raise the front and rear wheels alternately and turn the wheel by hand. The brake disc must run smoothly.
6. Inspect your brake discs for soiling, in particular for oil and grease. Clean the soiled brake discs immediately. (See s*ection 14.2, How to clean and care for your EPAC*).

6.8 Inspecting the drive and chain

1. Ask someone to help you to lift the bicycle so that the rear wheel is no longer in contact with the ground.
2. Turn the right-hand pedal arm in a clockwise direction and observe the chainwheel and the sprocket assembly from above.
   - The chainwheel and sprocket must not have any lateral runout.
   - There must not be any foreign matter in any of the components. Remove any such foreign matter if it is easy to do so.
3. Press the left-hand pedal arm towards the chain run in the position shown.

   - You should not feel any bearing play.
   - No cracking or grinding noises should be heard.
4. Inspect the chain for damage.
   The chain must not be damaged at any point, e.g. by bent chain links, protruding chain link pins, etc. or jammed and immobile chain links.
5. With the bike at standstill, turn the right-hand pedal lever contrary to the drive direction and observe the chain run at the derailleur rollers of the rear derailleur. The chain must run smoothly over the derailleur rollers and must not jump.

6.9 Checking the Lights (if present)

NOTE:
This section applies only if your EPAC is equipped or has been retrofitted for public roads, see section 1.3, Legal regulations.

⚠ WARNING Danger from falls and accidents
Failure of the headlight and rear light can lead to dangerous riding situations in the dark or with poor visibility. You might fail to see obstacles or be overlooked yourself by other road users.

You should use your EPAC in such visibility conditions only with the lights switched on and fully functioning.

1. Turn on your lights
   See user information for your lights.
2. Lift the front wheel.
3. Rotate the front wheel vigorously by hand.
   - The headlight and rear light must come on.
   - If your EPAC has a parking light, the headlight and rear light must also light up when the front wheel stops turning.

6.10 Inspecting the luggage rack (if present)

NOTE:
This section applies only if your EPAC is equipped or has been retrofitted with a luggage rack.

⚠ WARNING Danger from falls and accidents
Loose or hanging parts of the luggage rack can jam the wheels and result in serious falls.

Use your EPAC again only when the luggage rack has been properly attached in an approved workshop.

1. Shake the luggage rack at right angles to the direction of travel with your hands.
   - The luggage rack mountings must not come loose.
   - The luggage rack or parts of it must not touch the tyre.

6.11 Checking the side stands (if present)

⚠ WARNING Danger from falls and accidents
A side stand can lead to serious falls when riding if unfolded. This also applies to a kickstand which folds out automatically while you are riding.

A kickstand which is bent, too short or too long will not provide your EPAC with sufficient stability. Your EPAC can fall over, injuring you or other individuals.

Your EPAC and other objects located nearby, such as other bicycles, cars etc. may be damaged.

- **Always fold away the kickstand before riding the bicycle.**
- **You should have bent kickstands repaired or replaced in a specialist workshop.**
- **With length-adjustable kickstands:**
  Have the right length adjusted in a specialist workshop if your EPAC is not stable.

1. Carry out a visual inspection of the screw connections of the kickstand.
2. Always fold up the kickstand before riding your bicycle. The stand must not fold downwards of its own accord.

3. Touch the arm of the stand lightly to push it downwards.
   The arm of the stand must not fold down.

4. With adjustable-length stands:
   use hand force to check that the extendable section cannot be moved.

6.12 Checking the drive electrical system

⚠ WARNING Danger from fire
A defective or damaged drive electrical system can cause a short circuit. This means that there is a danger of fire.

- **Carry out a visual inspection whether all electric cables are undamaged and correctly laid.**
- **Do not turn on the electrical control system until you have completed all of the other tests.**
- **Check for any error messages in the display.**
- **You should only use your EPAC if the drive electrical system is free of faults and there are no error messages in the display. Otherwise you should only use your EPAC again when it has been repaired in a specialist workshop.**

6.13 Checking other points

⚠ WARNING Danger of cuts
Damaged parts of your EPAC can have sharp edges that might cause injuries.
Please inspect all parts for damage.

Have any damaged parts repaired or replaced immediately in an approved workshop.

7 Adjusting the EPAC

NOTE:
You may carry out certain adjustments on your EPAC yourself. You should only carry out this work yourself if you have the stated tools.

7.1 Adjusting the saddle position

Your saddle is attached with two clamping bolts. You need an Allen key and a torque spanner with a 5 mm hexagon socket bit attachment.

Adjusting the horizontal position or angle of your saddle:

1. Loosen the clamping bolts by a few turns until the saddle can be moved easily and/or the angle can be easily adjusted.
2. Move the saddle to the desired position.
3. Retighten the clamping bolts with the torque spanner. The specified tightening torque can be found on the seat post.

7.2 Adjusting the saddle height

1. Loosen the clamping of the saddle post.
   See *section 8.4.2, Opening and closing the quick-release axle on the seat post clamp*.
2. Move the saddle with seat post to the desired position.
   Please follow the instructions for the insertion depth of the saddle post, see *section 13.2, Installing and dismantling the saddle post with the saddle.*
3. Clamp the seat post securely in position.

7.3 Adjusting the spring fork (if present)

7.3.1 Adjusting the hardness of the spring

If your suspension fork has a steel spring suspension, you can adjust the behaviour of the spring preload on the left fork leg.

1. The rule of thumb is: The suspension fork should sink in approximately 20 to 25% of the total suspension travel distance when the rider sits on the bicycle in the riding position. With the forks used here, which have a travel distance of 60 mm, this 20 - 25% is equivalent to 12 - 15 mm
   If you are in any doubt about the setting, please contact your specialist bicycle dealer.
2. If the fork is too soft, turn the adjustment knob clockwise until the values stated in paragraph 1 have been reached.
3. If the fork is too hard, turn the adjustment knob anti-clockwise until the values stated in paragraph 1 have been reached.

NOTE:
If the adjustment range of the fork is not sufficient to adapt the hardness of the spring to your body weight, including the load, it is necessary to install a different steel spring with the appropriate hardness in the fork. Please contact your specialist dealer on this.

7.3.2 Adjusting the air pressure

If your suspension fork has air suspension, you can adjust the spring behaviour by means of the air pressure. For the adjustment you need a special suspension fork pump. The use of other pumps may damage your suspension fork.

NOTE:
You can purchase a suspension fork pump that is suitable for your EPAC from your specialist bicycle dealer. If you do not have such a pump, have your suspension adjusted by your specialist bicycle dealer.

1. The rule of thumb is: The suspension fork should sink in approximately 20 to 25% of the total suspension travel distance when the rider sits on the bicycle in the riding position. With the forks used here, which have a travel distance of 60 mm, this 20 - 25% is equivalent to 12 - 15 mm
   If you are in any doubt about the setting, please contact your specialist bicycle dealer.
2. Screw the head of the suspension fork pump on to the connection of your suspension fork.
   Position of the connection: *See the user information of the suspension fork manufacturer.*
3. Continue pumping until you have reached the required air pressure.
4. Unscrew the pump head.
   NOTE:
   Unscrew the pump head quickly in order to keep the amount of air escaping

(which can be heard as hissing) as small as possible.

7.3.3 Switching off the suspension

With the red lever on the right fork rod you can turn off the suspension of the fork almost completely. The fork tubes can only move in and out to a small extent.

⚠ WARNING Danger from falls and accidents
At a high speed, particularly when riding downhill on unpaved terrain, riding behaviour with the suspension switched off is very poor. The front wheel may lose contact with the ground.
You should switch on the suspension fork before riding your bicycle fast (downhill).

1. Switching off the suspension:
   Turn the lever counter clockwise
2. Switching on the suspension:
   Turn the lever clockwise.

8 Operating the EPAC

8.1 Electric drive

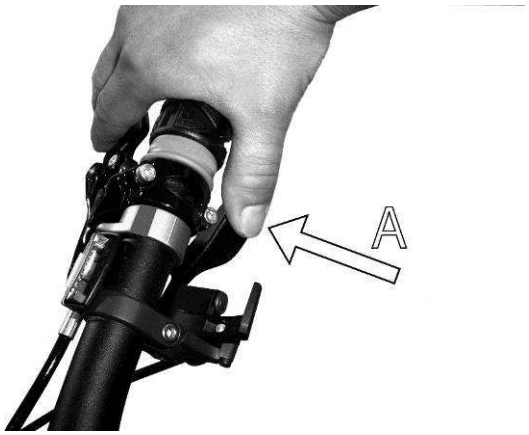
The components of the electric pedal assistance and their operation are described in the enclosed Bosch original operating instructions.

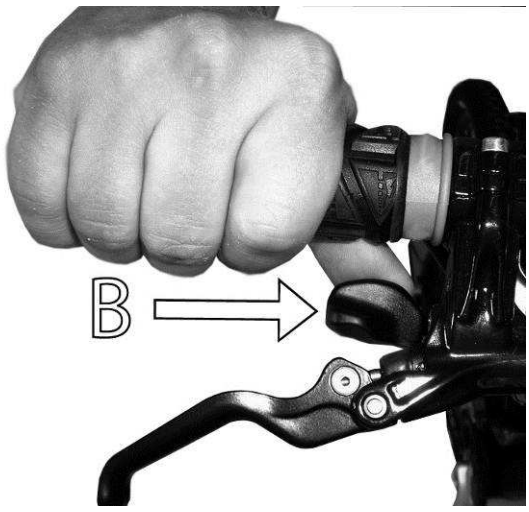
8.2 Gears

Your EPAC has a derailleur made by Shimano with so-called Rapidfire gear levers. When the gear is changed, the chain is moved to a different sprocket.

The gear can only be changed while the bicycle is moving. The crankset must turn in the direction of the drive.

Your gear shift has two levers. Lever A is used to shift to a larger chainring or sprocket, lever B to a smaller chainring or sprocket.





The right-hand switch operates the rear derailleur. Here switching to a larger sprocket results in a lower gear ratio (= lower gear). The pedalling resistance becomes lower, you can only reach a lower speed, but it is easier to climb hills.

8.2.1 Switching to a larger sprocket:

1. Please pedal in the direction of the drive.
2. Press lever A with your thumb beyond the first locking step until you hear a clear click and hold it pressed until the desired gear is engaged.
3. If you would like to leave out several gears, press the lever right down and hold it pressed until the desired gear is engaged.

8.2.2 Switching to a smaller sprocket:

1. Please pedal in the direction of the drive.
2. Pull lever B until you feel and hear it engage and then release the lever again immediately.

8.3 Brakes

⚠ WARNING Danger from falls and accidents
If you operate the brakes too firmly this can lock the wheels and cause the bicycle to skid or roll over.

- **Familiarise yourself with the use of the brakes. Begin by riding slowly and operating the brake lever gently.**
- **You should perform these braking exercises on level surfaces without any road traffic.**
- **Brake in a controlled manner and press both brake levers at the same time.**

NOTE:
Disc brakes only develop their full braking power after a certain "running-in phase". The rule of thumb is: After 30 brief braking operations from a medium speed (approximately 25 km/h) down to a standstill the brakes are considered to have been run in. Avoid long downhill riding for as long as your braking system has not been run in. As soon as your braking system has been run in, the braking force at your disposal is very strong. If you pull the brake lever too strongly, it is possible that the wheels will lock.

NOTE:
About 65% of the total braking power is provided by the front brake.
Maximum braking power is reached by simultaneously pressing both levers.

1. Pull the lever towards the handlebars to actuate the brake.

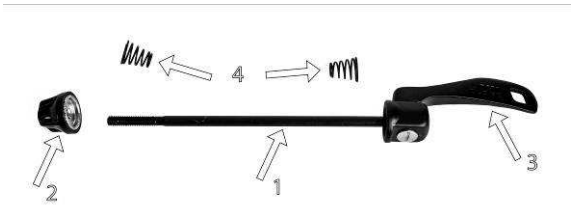
8.4 Quick-release axles

The hubs of your wheels are mounted with quick-release axles in the dropouts of the fork or frame. The clamping of your saddle post is equipped with a quick-release axle. These clamping systems permit quick removal and installation of these components without the use of tools.

⚠ WARNING Danger from falls and accidents
If the wheels and seat post are not correctly mounted, these parts can become loose and as a result lead to dangerous riding situations, falls and accidents.

- **Comply with the following description.**
- **Practise the operation of the quick-release axle several times and regularly.**
- **If after installation you are not sure whether your wheels and/or the saddle post have been correctly mounted, do not use your EPAC and consult your specialist bicycle dealer.**

8.4.1 Opening, closing the quick-release axles



1	Axle	3	Lever
2	Nut	4	Spring

1. Opening the quick-release axle

   - Press the eccentrically pivoted lever away from the hub.
     The lever can now be turned by approx. 180° about i ts own axis.

- Turn the screw nut in an anti-clockwise direction until the wheel can be pulled out of the frame or front forks without great effort.
  NOTE:
  Make sure that you do not lose the springs.

2. Closing the quick-release axle

   - If the quick-release axle has been completely removed from the hub: push the quick-release axle from the left-hand side (in the direction of travel) through the hub.

- Place the spring and screw nut on to the quick-release axle.

- Turn the nut in a clockwise direction on to the right-hand end of the quick-release axle, which is protruding out of the hub.

3. Tilt the eccentrically pivoted lever so that it forms roughly the extension of the hub axle. Hold the lever in this position.

4. Now turn the screw nut until the eccentrically pivoted lever when turned through 90° about its pivot can only move against a resista nce (it then forms more or less the straight extension of the hub axle).

5. Now press the lever by a further 90° up to its e nd position.

6. Testing the adjustment of the quick-release lever:

   - If the quick-release lever does not close tightly enough:
     ⚠ WARNING Danger from falls and accidents
     If the lever is too loose when closed, the front wheel may become

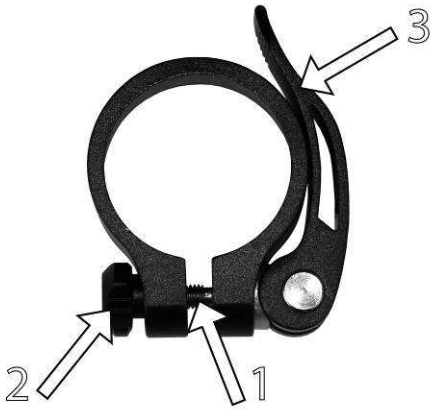
loose and move its position. This can lead to dangerous riding situations, falls and accidents.

- Open the quick-release lever.
- Tighten the nut slightly in a clockwise direction.
- Close the quick-release lever.

- If the quick-release lever closes too tightly:
  ⚠ WARNING Danger from falls and accidents
  If the lever cannot move in its final position (90° to the hub axle) because the pre-tension is too great, it is possible that the lever will become loose of its own accord while you are riding the bicycle, so that the front wheel also becomes loose. This can lead to dangerous riding situations, falls and accidents.
  - Open the quick-release lever.
  - Loosen the nut slightly in an anticlockwise direction.
  - Close the quick-release lever.

7. Check that the wheels are securely fitted as described in *section 6.1.1*.

8.4.2 Opening and closing the quick-release axle on the seat post clamp



1 Axle
2 Knurled nut
3 Lever

NOTE:
Opening and closing the quick-release axle on the seat post clamping device is carried out in the same way as opening and closing the quick-release axle on the front wheel, see section 8.4.1 . Opening, closing the quick-release axles .

- **The quick-release lever of the quick-release axle is closed by turning the quick-release axle itself.**
- **To open and close it you should only operate the quick-release lever. You do not have to further loosen or completely release the entire axle in order to dismantle the saddle post.**
- **You should only turn the knurled nut if the quick-release lever can be moved too easily or only with difficulty.**

- **Before closing the quick-release lever, ensure that the clamp is flush and in the correct position on the seat tube.**

9 Loading the EPAC

⚠ WARNING Danger from falls and accidents

Adding an extra load impairs the riding behaviour of your EPAC and the braking distance becomes longer. And if you overload your EPAC, it is possible that parts of it might even break or fail. All of this can lead to dangerous riding situations, falls and accidents.

- You should load your EPAC in such a way that you always have enough room to move and can always operate your EPAC safely when it is loaded.
  Adapt your riding to the more difficult riding behaviour of the bicycle.

- Do not use your EPAC for transporting goods, but only as an item of sports equipment and for moving from one location to another.

- Never use your EPAC with a bicycle trailer.

- Do not transport any bulky luggage or other adults on a luggage rack (optional).

- Children should only be transported in child seats. Install child safety seats only on luggage racks which are suitable for this purpose.
  Please contact your specialist bicycle dealer concerning the selection and mounting of a child seat. He or she will be pleased to advise you.

- Transport your luggage only on suitable carrier systems.

- Use only carrier systems that are approved for your EPAC see *section 2.4.2* , *What must you bear in mind when retrofitting accessories and carrying out conversions?* .
  Please contact your specialist bicycle dealer to retrofit a carrier system. He or she will be pleased to advise you.

- Do not exceed the maximum permitted loading weight for your loading system. Please see the documentation for your loading system for the maximum permitted loading weight.

- Do not exceed the maximum permitted loading weight for your EPAC (rider plus children and luggage).

- Load your EPAC in such a way that the luggage and carrier system never come into contact with the wheels, drive, chain or brakes.

- Load your EPAC in such a way that the luggage and carrier system never cover the lights or reflectors of your EPAC.

How to determine the maximum permitted loading weight:

1. If you would like to transport a child on your EPAC:
   Weigh the child on a calibrated set of scales.
2. Weigh yourself wearing all of your cycling clothes and helmet on a calibrated set of scales. If you wish to use a bicycle rucksack while you are riding, stand on the scales with the loaded rucksack.
3. Weigh the luggage that you would like to transport on your luggage rack on a set of calibrated scales.
4. Adds together all of the weights. The total must not be more than 115 kg.
5. Reduce the weight of your luggage if the total is more than 115 kg.
6. Securing the child:
   Please secure your child in accordance with the documentation for your child seat.
   If you have any questions, please contact your specialist bicycle dealer. He or she will be pleased to advise you.

   Loading the luggage rack (optional):
7. Place your luggage on the middle of your luggage rack.
8. Please mount and load your saddlebags, if you are using any, in accordance with the documentation for your saddlebags. If you have any questions, please contact your specialist bicycle dealer. He or she will be pleased to advise you.
9. Attach your luggage with suitable and stable holding systems (spring clamp, click system, tensioning straps, elastic belt straps or similar items).
10. Shake your EPAC vigourously after you have loaded it.
    The luggage and carrier system must be firmly attached and must not become loose.
    If the luggage or carrier system are not firmly attached or become loose: secure the luggage or carrier system until it is firmly attached.

10 Riding the EPAC

⚠ WARNING Danger from falls and accidents
With your EPAC you can reach unusually high speeds.

- **You should only use this EPAC if you can safely ride at high speeds and brake from such speeds.**
- **Always wear a helmet when riding your bike.**
- **Ride with foresight and defensively.**
- **Be ready to brake at all times.**
- **Do not ride after consuming alcohol.**
- **Ride in such a way that you have your EPAC under control at all times and can react correctly in the event of sudden dangerous situations.**
- **When wet, the brakes may not be as effective. The braking distance becomes longer.**
- **When riding, wear only suitable clothing that does not hinder the operation of the EPAC or your sight.**
- **Always wear tight-fitting legwear when riding. Loose clothing can become tangled in the EPAC and lead to serious falls.**
- **In the dark and with poor visibility, wear clothing with reflective stripes and switch on your lights.**
- **Note that some items of clothing and/or the use of a backpack can hinder your mobility.**

⚠ WARNING Danger from falls and accidents resulting from unexpected start-up

If you place your foot on the pedal and move the wheels slightly, the electric drive will start up. There is a danger that you will move off unintentionally. This is particularly dangerous at traffic lights, level crossings and on the edge of slopes, as well as at roads and paths where you do not have priority.

- **You should only put your foot on the pedal when you actually want to move off.**
- **Operate both of the brakes immediately beforehand and only release them when you actually want to move off.**

⚠ WARNING Danger from falls and accidents resulting from unexpected after-running

If your engine management system is faulty, your EPAC may continue running.
Drive defensively, comply with all of the servicing intervals and contact your specialist workshop immediately in the case of faults.

⚠ WARNING Danger from falls and accidents
Your driving safety depends in part on your speed and the driving conditions. The faster you ride and the more unfavourable the riding conditions are, the greater is your risk.

- Always adapt your speed to your riding skills and the riding conditions.
- Please note that roads and paths may be damaged and may have obstacles, roadway edges, speed humps, bumps in the ground etc.
  In such areas ride particularly slowly and carefully. If necessary, push or carry your EPAC.

⚠WARNING Danger from body parts being drawn in and shearing forces
Rotating wheels can injure hands and other parts of the body.

- **Keep your hands and other parts of the body away from rotating wheels!**
- **Please ensure that your child's hands and other parts of their body cannot come into contact with the revolving wheels.**

⚠ CAUTION Danger of Burns
When riding - especially in the case of lengthy downhill rides and frequent braking - brake discs can become so hot that you may burn your skin if it comes into contact with them. Do not touch the brake discs immediately after riding your bicycle.
Allow the brake discs to cool down for at least 5 minutes before touching them. In order to check the temperature, lightly tap with your bare finger very briefly on the brake discs. If these are hot, wait a few minutes and repeat this test until the brake discs have cooled down completely.

10.1 Switching on the electric drive

The components of the electric pedal assistance and their operation are described in the enclosed Bosch original operating instructions.

10.2 Riding the EPAC

1. Hold the left-hand grip of the handlebars with your left hand and the right-hand grip with your right hand.
1. Press both brakes.
2. When riding, place your left foot on the left pedal and your right foot on the right pedal.
3. Sit on the saddle or ride standing up on the pedals.
4. Release both of the brakes.
5. Press down on the pedals.

10.3 Switching off the electric drive

The components of the electric pedal assistance and their operation are described in the enclosed Bosch original operating instructions.

11 What to do in the case of a fall or accident

⚠ WARNING
Fire Hazard

If your EPAC falls over this may result in short circuits in the rechargeable battery pack and cause the rechargeable battery pack to catch fire.

- **After a fall or accident you should leave your EPAC outside for an hour away from combustible materials.**
- **Move the back of your finger briefly and carefully along the battery pack. If you notice any unusual warmth, leave your EPAC where it is. Under no circumstances should you continue to use your EPAC. Transport your EPAC to your specialist bicycle dealer as soon as the battery pack has cooled down.**
- **If flames or smoke come out of the down tube you must immediately leave your EPAC where it is. Put out the fire with fire extinguishing equipment, if available. If you do not have any extinguishing equipment available, wait until the fire has become extinguished and all of the parts of your EPAC have cooled down. Then transport your EPAC without delay to a specialist bicycle dealer.**
- **If there is a danger that the fire will spread to neighbouring items, call the fire brigade immediately.**
- **You should only use your EPAC again when it has been checked by a specialist workshop and repaired if necessary.**

⚠ WARNING Danger from falls and accidents
A fall or accident can damage safety-related parts of your EPAC. This can lead to dangerous riding situations, falls, accidents and material damage.

- Contact your specialist bicycle dealer immediately after an accident or fall.
- You should only use your EPAC again when it has been properly repaired by the specialist bicycle dealer.

After a fall it is essential to have all of the parts of your EPAC which have hit a hard surface, such as the

- **Handlebars**
- **Handlebar stem**
- **and crank**

replaced.

All other parts must be inspected by your dealer and replaced, if necessary.

NOTE:
If you have any questions after falls and accidents, you can also contact a bicycle specialist. In Germany you can obtain corresponding contact addresses from your local Chamber of Commerce and Industry (IHK).

12 Parking the EPAC safely

⚠ WARNING Risk of injury from your EPAC falling over
A EPAC that is supported by its kickstand or leaning against a house wall or garden fence, for example, can fall over when subjected to a small force. This may cause injury to individuals or animals and damage other objects.

- **You should only park your EPAC where it does not represent an obstacle or nuisance to anyone.**
- **Keep children and animals away from your parked EPAC.**
- **Please do not park your EPAC next to items which are easily damaged, such as cars and similar items.**

If your bicycle has a kickstand:

1. Stop your EPAC on a flat and firm surface.
2. Turn off the electric drive. (See *attached BOSCH original operating instructions).*
3. With the bicycle stationary, use your right foot to fold the kickstand down until it clearly locks in place.
4. Turn the handlebars so that they point slightly to the left.
5. Lean your EPAC carefully on its left side until it is in a stable position.
6. Check the stability of your EPAC:
   - Hold your EPAC lightly with one hand by the handlebars or saddle.
   - Push the saddle of the EPAC lightly with the other hand in all directions. Look for another place to park your EPAC if it could easily fall over.

If your bicycle does not have a kickstand:

1. Stop your EPAC on a flat and firm surface.
2. Turn off the electric drive. (See *attached BOSCH original operating instructions).*
3. Dismount on the left.
4. Lean your EPAC with the back wheel or with the saddle against a firm object.
5. Turn the handlebars to the side to which you have tilted your EPAC.

NOTE:
If there is no suitable object available, you can also carefully place your EPAC on the ground.

13 Transporting the EPAC

⚠ WARNING Danger of injury through shearing and trapping in the back wheel

If you load your EPAC with the motor switched on, this may start up unintentionally if the pedals are touched. The rotating rear wheel may then cause serious injuries. If the EPAC is then placed on the ground, it may make uncontrolled movements.
Remove the battery pack before transport; see the *enclosed BOSCH original operating instructions.*

⚠ WARNING
Fire Hazard

In strong sunlight the interior of a car can heat up to very high temperatures. High temperatures may cause internal short-circuits in the rechargeable battery pack and cause the rechargeable battery pack to catch fire.
Park your car only in shady places and make sure that the ambient temperature is below 50°C.

- **If flames or smoke come out of the down tube you must immediately leave your EPAC where it is. Put out the fire with fire extinguishing equipment, if available.**
- **If there is a danger that the fire will spread to neighbouring items, call the fire brigade immediately.**

⚠ WARNING Danger from falls and accidents
The use of bicycle racks can damage parts of your EPAC which are relevant to safety. The failure of these parts can lead to dangerous riding situations, falls, accidents and material damage.

- **Transport this EPAC only inside your car.**
- **No other objects may be placed on this EPAC during transport.**
- **This EPAC must not be clamped into car transport systems (roof racks, rear or interior carrying devices etc.).**

13.1 Assembling and dismantling the wheels

In order to transport the EPAC in your car you can dismantle the wheels.

⚠ WARNING Danger from falls and accidents
Incorrectly installed wheels can lead to dangerous riding situations, falls and accidents. Check that the wheel is correctly mounted before you use your EPAC again.

- **Check that the wheels are positioned in the centre of the front wheel fork and frame.**
- **Shake both wheels strongly at right angles to the direction of travel.**
  - **The wheels must not move in their mounting.**
  - **No cracking or grinding noises should be heard.**
- **Check that the quick-release lever is correctly closed, see *section 8.4, Quick-release axles*.**

⚠ WARNING
Danger of burns

After long downhill rides it is possible that the brake discs have become very hot.

- **Do not touch the brake discs immediately after a downhill ride.**
- **Allow the brake discs to cool down for at least 5 minutes before touching them.**
- **In order to check the temperature, lightly tap with your bare finger very briefly on the brake discs. If these are hot, wait a few minutes and repeat this test until the brake discs have cooled down completely.**

NOTE:
Your EPAC has a disc brake. After dismantling the wheel you should use the enclosed transport lock when transporting the EPAC. Remove this only immediately before installing the wheels again.

13.1.1 Dismantling the front wheel

1. If your EPAC has been retrofitted with a hub dynamo:
   Disconnect the plug connector between dynamo and wiring.
2. Open the quick-release axle See *section 8.4.1, Opening, closing the quick-release axles .*
3. Unscrew the lock nut until it is just still on the axle.
4. Pick up your EPAC with the handlebars and pull the front wheel out of the fork ends of the front-wheel fork.

5. Insert the enclosed transport securing device for your disc brake between the brake pistons.
   NOTE:
   Hydraulic brakes must never be actuated after removal of the wheel!
   Please use the enclosed transport securing devices. Remove these before re-installing the front wheel.

6. Place your EPAC carefully on the ground with the fork ends.

13.1.2 Install the front wheel

1. Remove the transport lock from the brake pistons

2. Pick up the EPAC by the handlebars.
3. Position the hub of the front wheel under the fork ends of the front-wheel fork.

4. Insert the wheel so that the brake disc slides smoothly between the brake pads.

5. Lower the fork carefully until the axle is flush with the stop of the fork ends on the left and right.

   - When clamping with the quick-release axle
     Close the quick-release axle in accordance with *section 8.4.1, Opening, closing the quick-release axles .*

6. If your EPAC has been retrofitted with a hub dynamo:
   Reconnect the plug connector between hub dynamo and wiring.

7. Operate the front wheel brake several times with the EPAC stationary after you have reinstalled the front wheel.

8. Lift up the EPAC by the handlebars and turn the front wheel by hand. If a brake block is in contact with the wheel rim, this can indicate incorrect mounting of the hub in the fork dropouts. In this case you should open the quick-release lever and shake the front wheel lightly to and fro (at right angles to the direction of travel). Repeat the installation from *step 5.* If this does not improve the situation, contact your specialist bicycle dealer immediately.

9. If your EPAC has been retrofitted with a hub dynamo:
   Check that the lights are working correctly.
   See *section 6.9, Checking the* .

13.1.3 Dismantling the rear wheel

1. Shift to the smallest pinion of the sprocket assembly on the rear wheel (see *section 8.2.2, Switching to a smaller sprocket*:.

2. Operate the rear brake until the rear wheel comes to a complete stop.

3. Open the lever of your quick-release axle in accordance with *section 8.4.1, Opening, closing the quick-release axles .*

4. Raise the bike at the rear end and push the gear shift mechanism to the rear. In this position, push the rear wheel with alight pressure towards the opening in the frame.

5. If your bike has a disc brake, insert the enclosed transport lock between the brake pistons.
6. After removing the wheels, lay the bike carefully on its left side.

13.1.4 Install the rear wheel

1. If your bike has a disc brake, remove the transport lock from the brake pistons.
2. Raise the bike at the rear.
3. Place the rear wheel under the frame so that the chain fits over the smallest pinion.
4. Lower the rear end carefully until the axle is on the stop of the open ends of the frame on left and right.
5. With disc brake: Insert the wheel so that the brake disc slides smoothly between the brake pads
6. Close your quick-release axle or thru axle in accordance with *section 8.4.1, Opening, closing the quick-release axles .*
7. Press the rear wheel brake several times with the bicycle standing still.
8. Lift up the bicycle by the rear and turn the rear wheel by hand. If a brake block is in contact with the wheel rim, this can indicate incorrect mounting of the hub in the fork dropouts. In this case, apply the brakes to the rear wheel, open the quick-release or thru axle and shake the rear wheel back and forth lightly (sideways to the direction of travel). Repeat the installation from *step 5.* If this does not improve the situation, contact your specialist bicycle dealer immediately.

13.2 Installing and dismantling the saddle post with the saddle

In order to make it easier to transport your EPAC you can dismantle the saddle post and the saddle. The saddle post is fastened with a clamp in the seat tube of the frame. The clamping is performed by means of a quick-release axle and knurled nut.

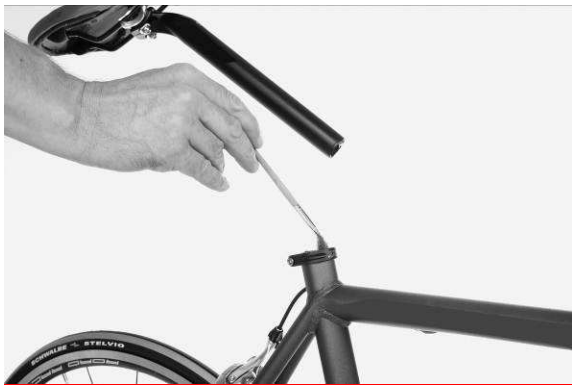
13.2.1 Dismantling the seat post

1. Open the quick-release lever of the saddle clamping device.
   See *section 8.4.2, Opening and closing the quick-release axle on the seat post clamp*.

2. Pull the saddle with saddle post out of the frame.

13.2.2 Installing the saddle post

1. If the insertion area is free of grease:
   Grease the insertion area of the saddle post.



Push the saddle with saddle post into the saddle tube of the frame until the required saddle height is obtained. In this position the lower end of the saddle post must be at least 10cm below the upper edge of the saddle tube.

NOTE:

Do not rely on the marking on the saddle post.
Check the correct insertion depth as follows:

- Place a finger tip against the saddle post in the installed position immediately above the clamping bolt.

- Leave your finger in this position and pull the saddle post out of the saddle tube.

- Hold the saddle post at the side next to the seat tube so that your fingertip is again located directly above the clamp. In this position the lower end of the saddle post must be at least 10 cm below the upper edge of the seat tube.

2. Turn the saddle so that the saddle tip is pointing in the direction of travel.
3. Ensure that the clamp is flush with the frame and that the slots in the saddle tube and clamp are aligned.
4. Close the quick-release lever.
   See *section 8.4.2, Opening and closing the quick-release axle on the seat post clamp.*

NOTE:
Mark the correct position of the saddle post for your height with a piece of adhesive tape.

5. Check the saddle post.
   See *section 6.2, Checking the Saddle, Seat Post*.
   ⚠ **WARNING Danger from falls and accidents**
   An incorrectly installed saddle post can lead to dangerous riding

situations, falls and accidents.

14 Maintaining the EPAC

⚠ WARNING Danger of injuries to fingers and arms, danger of accidents
During testing the EPAC might move off unexpectedly.
Turn off the electric drive (see *attached BOSCH original operating instructions).*

⚠ WARNING Danger from falls and accidents
Electrical hazards when working on the electrical equipment
Incorrectly performed maintenance can lead to dangerous riding situations, falls and accidents.

- **You should only carry out the maintenance work on your EPAC which is permitted according to this section.**
- **Have all other maintenance work carried out by a specialist workshop for bicycles.**

⚠ WARNING Danger of injury through shearing and trapping in the back wheel
If the EPAC is ready to be ridden, the electric drive may start unintentionally. The rotating rear wheel may then cause serious injuries. If you put the EPAC down on the ground, uncontrolled movements may occur which can also injure you.
Before carrying out any work on your EPAC, make sure that it is not prepared for moving off (traction standby). To do this, switch off the electric drive (see *attached BOSCH original operating instructions).*

14.1 Your servicing and maintenance plan

Work	Interval
Cleaning the EPAC See *section 14.2, How to clean and care for your EPAC*.	• whenever you have ridden the bicycle on muddy or dirty surfaces • every 200 km at the latest
Adjusting the air pressure of the suspension fork See *section 17.3, Adjusting the spring fork (if present)*	every 500 km or every 3 months after every change to the total weight by 10 kg
Cleaning and greasing the chain See *section 14.2, How to clean and care for your EPAC, point 7*	• after every ride in the wet • whenever you have cleaned your bicycle with water • after every prolonged ride on a sandy surface • every 200 km at the latest

14.2 How to clean and care for your EPAC

⚠ WARNING
Danger of Injury
Before carrying out any work on your EPAC, make sure that it is not prepared for moving off (traction standby). To do this, switch off the electric drive (see *attached BOSCH original operating instructions).*

⚠ WARNING Danger from falls and accidents
Incorrect cleaning and care can lead to dangerous riding situations, falls and accidents. Maintain your EPAC carefully according to the instructions below.

⚠ WARNING Danger from falls and accidents
Corrosion - which can also affect non-rusting parts - may damage the safety components of your EPAC so severely that they break when you are riding it. This may result in serious falls.

Corrosion can result, amongst other things,
from salty air near the coast or the spreading of salt on the roads in the winter
through a corrosive atmosphere, e.g. on industrial sites
through sweat.

- **Protect your EPAC with spray wax or a similar preserving agent against all contacts with corrosive substances.**
- **Clean your EPAC after all contacts with corrosive substances and protect it again in accordance with the following description.**
- **Do not use any steam jet/high-pressure cleaner for wet cleaning. The strong waterjet may damage your EPAC or cause a short circuit (danger of fire).**

NOTE:
Good care and maintenance increases the service life of your EPAC and its components.

- **Clean and service your EPAC at regular intervals.**
- **Use a gentle water jet or a bucket of water and sponge to clean your bicycle.**
- **Use only clean fresh or desalinated water. Do not use any saltwater (e.g. seawater)**

NOTE:
With many cleansers and moderate soiling it is often sufficient to spray on the cleanser and to rinse it off again after the prescribed waiting time.
Stubborn soiling can be loosened after the reaction time, e.g. with a radiator paintbrush or sponge, before rinsing off.

NOTE:
Cleansers, lubricants and corrosion inhibitors are chemical products. Some of these agents can damage your EPAC.

- **Use only products that are expressly suitable for bikes.**
- **Ensure that this agent does not attack paintwork or rubber, plastic or metal parts etc. Please consult your specialist bicycle dealer on this.**
- **Follow the manufacturers' instructions.**

1. Make sure the EPAC cannot move off:
   See *attached BOSCH original operating instructions.*
2. Remove coarse soiling such as earth, stones, sand, etc. using a gentle water

spray.

3. Allow the EPAC to dry for a while.
4. Spray the entire EPAC with a suitable cleansing agent.
5. Use a water jet to rinse down the entire EPAC. You can also carry out additional wet cleaning with the help of a sponge or cloth.
6. Allow the EPAC to dry.
7. Cleaning and greasing the chain:
   - Ask someone to help you to lift the bicycle so that the rear wheel is no longer in contact with the ground.
   - Rotate the crank slowly in the direction of the drive.
   - Pour a small amount of a suitable chain cleansing agent onto a clean, lint-free cotton cloth and wipe off the chain.
   - Repeat this procedure as often as necessary with a clean part of the cotton cloth until the chain is clean.
   - Allow the cleansing agent to evaporate for approx. 1 hour.
     NOTE:
     If there is still cleansing agent between the chain links, the new lubricant will be immediately degraded and therefore has no lubricating effect.
   - Apply lubricant suitable for bike chains sparingly to the chain links.
     ⚠ **WARNING Danger from falls and accidents**
     If you use too much or unsuitable lubricant, this may drip on to the brake disc and cause it to smear. This may cause the braking effect to deteriorate significantly.
     - Remove any excess lubricant from the chain using a clean, dry and lint-free cotton cloth.
     - Clean the wheel rim and brake disc with a suitable degreasing agent. Consulting your specialist bicycle dealer.
       NOTE:
       Lubricant for motorbike chains will clog your bike chain and drive components.
       Use only lubricants expressly approved for use on bike chains.
8. Clean any remaining heavily soiled parts by hand using a clean and lint-free cotton cloth and a suitable cleansing agent.
9. Spray the whole EPAC with a suitable spray wax or similar preservative.
   ⚠ **WARNING Danger from falls and accidents**
   Spray wax or other preservatives on the brake discs may reduce the braking effect.
   Clean the brake discs with a suitable degreasing agent. Consulting your specialist bicycle dealer.
   These parts must not be treated with preserving agents.
   - **Brake linings**
   - **Brake disks**
   - **Handles, brake and gear levers**
   - **Saddle**
   - **Tyre**

10. Polish your EPAC after the prescribed waiting time with a clean, lint-free cotton cloth.
11. Clean the brake discs by hand using a clean, dry, lint-free cotton cloth and a suitable degreasing agent.

14.3 Workshop service

⚠ WARNING Danger from falls and accidents
Servicing which is not/incorrectly carried out, as well as damage from falls or accidents which is not repaired, may lead to dangerous riding situations, falls and accidents.

- **Take your EPAC on time to a workshop that specialises in bicycles at the prescribed servicing intervals.**
  Only in this way can worn parts and any damage be reliably discovered and repaired.
- **Ask your specialist workshop to show you their confirmation of participation in a training course for your EPAC to prove that they are qualified to carry out the work.**

Work	Interval
First inspection	after 500 km or 6 months at the latest
Inspection of the brake linings, brake discs, chain	every 500 km
Regular inspections	every 1000 km or once a year

15 What to do in the case of faults

⚠ WARNING
Danger from falls and accidents resulting from unexpected after-running
If your engine management system is faulty, your EPAC may continue running.

- **Be ready to brake at all times**
- **Drive defensively, comply with all of the servicing intervals and contact your specialist workshop immediately in the case of faults.**
- **You should only use this EPAC if you can safely ride at high speeds and brake from such speeds.**

⚠ WARNING
Danger from falls and accidents
Incorrectly performed troubleshooting can lead to dangerous riding situations, falls and accidents.

- **You should only carry out work on your EPAC which you are permitted to perform according to the following table.**
  Consult a specialist workshop for bicycles if your work is not successful.
- **Have all other work carried out by a specialist workshop for bicycles.**
- **You should contact your specialist bicycle dealer immediately if the riding behaviour of your EPAC does not appear to be normal, if you can hear unusual noises or if you notice any malfunctions which are not listed in the following table.**

⚠ WARNING
Danger of injury through shearing and trapping in the back wheel
If the EPAC is ready to be ridden, the electric drive may start unintentionally. The rotating rear wheel may then cause serious injuries. If you put the EPAC down on the ground, uncontrolled movements may occur which can also injure you.
Before carrying out any work on your EPAC, make sure that it is not prepared for moving off (traction standby), see *section 10.3, Switching off the electric drive*.

15.1 Gear shift, drive

Malfunction	Possible cause(s)	Remedy
Gears do not change or do not change smoothly	Shift lever not actuated correctly	Actuate the lever again
	Shift mechanism maladjusted	Contact your specialist bicycle dealer.
	• In the case of steep inclinations, excessive pressure on the pedal • and/or pedalling movement too slow	Repeat the gear shifting procedure on flat terrain. Changing gear while stationary: • Lift the rear wheel. • Turn the crank in the drive direction until the desired gear is engaged.
Drive blocks during or after gear shifting	Chain jamming	• Leave the bicycle where it is. • Make sure the EPAC cannot move off. To do this, switch off the electric drive (see *attached BOSCH original operating instructions).* • Actuate the gear lever in the opposite direction. • Lift the rear wheel. • if the following is possible without force: turn the crank in the drive direction. *NOTE:* *Under no circumstances should you apply force if the crank cannot be easily turned.* *Contact your specialist bicycle workshop immediately.*
Unusual noise such as cracking, loud grinding and/or banging	Drive/gearing components damaged	Contact your specialist bicycle dealer immediately.
Irregular resistance during the pedal movements	Drive/gearing components damaged	

Malfunction	Possible cause(s)	Remedy
Chain jumped off sprocket	• Incorrect operation of the gearshift • Maladjusted or damaged gear shift mechanism	• Leave the bicycle where it is. • Make sure the EPAC cannot move off. To do this, switch off the electric drive (see *attached BOSCH original operating instructions).* • Lift the chain onto the next sprocket by hand, • Lift the rear wheel. • if the following is possible without force: turn the crank in the drive direction. *NOTE:* *Under no circumstances should you apply force if the crank cannot be turned easily or if you do not have the strength to lift the back wheel.* *Contact your specialist bicycle dealer immediately.*
Chain jumped off during or after gear shifting	• Incorrect operation of the gearshift • Maladjusted or damaged gear shift mechanism	• Leave the bicycle where it is. • Make sure the EPAC cannot move off. To do this, switch off the electric drive (see *attached BOSCH original operating instructions).* • Actuate the gear lever in the opposite direction. • Lift the chain onto the next sprocket by hand, • Lift the rear wheel. • if the following is possible without force: turn the crank in the drive direction. *NOTE:* *Under no circumstances should you apply force if the crank cannot be easily turned.* *Contact your specialist bicycle dealer immediately.*

Malfunction	Possible cause(s)	Remedy
Chain jumps off repeatedly	• Repeated incorrect operation of the gearshift • Maladjusted or damaged gear shift mechanism	Operate the gearshift correctly, see *section 8.2, Gears.* Contact your specialist workshop immediately if the fault occurs when you change gear correctly.

15.2 Brakes

⚠ WARNING Danger from falls and accidents
The brakes on your EPAC are among the most important components for your riding safety. Failing brakes always lead to dangerous riding situations, falls and accidents. A brake malfunction is a serious danger to safety.

- **Contact your specialist bicycle dealer immediately if you notice the slightest malfunction or a deterioration in the braking effect.**
- **You should only use your EPAC again when it has been properly repaired by the specialist bicycle dealer.**

Malfunction	Possible cause(s)	Remedy
Brakes do not work	Brakes not correctly installed	Contact your specialist bicycle dealer immediately.
	Brakes damaged	Contact your specialist bicycle dealer immediately.
Decreasing braking effect, brake levers can be pulled too far	Brake linings worn	Have the brake linings replaced immediately in an approved workshop.
	With hydraulic brakes: Brake system leaking	Contact your specialist bicycle dealer immediately.
The brake drags	The brake disc is damaged	Contact your specialist bicycle dealer immediately.
	The wheel is not straight	Front wheel: Install your front wheel correctly (see *section 13.1, Assembling and dismantling the wheels)*
		Rear wheel: Please contact your specialist bicycle dealer.

15.3 Frame, Saddle Post and Suspension

⚠ WARNING Danger from falls and accidents
Defects and faults in the frame and suspension can lead to dangerous riding situations, falls, accidents and material damage.

- **Contact your specialist bicycle dealer immediately if you notice the slightest malfunction.**
- **You should only use your EPAC again when it has been properly repaired by the specialist bicycle dealer.**

Malfunction	Possible cause(s)	Remedy
Noises: Cracking, banging, grinding, etc.	Frame, seat post and/or suspension damaged	Contact your specialist bicycle dealer immediately.
Saddle post slips into the frame or twists	Clamp too loose	Check and increase the clamping force (see *section 13.2.2*)
	Saddle post diameter is too small	Assembly of a saddle post with correct diameter
Improper suspension function	Suspension not correctly adjusted	Adjust correctly according to the component user manual supplied with the bike.
	The suspension is blocked	Release the blockage (see *section 7.3.3*).
Improper suspension function despite correct adjustment	Suspension damaged	Contact your specialist bicycle dealer immediately.
The suspension fork cannot be locked	Actuation mechanism broken	Please contact your specialist bicycle dealer.

15.4 Luggage rack and lights

⚠ WARNING Danger from falls and accidents
Defects and faults in the luggage rack and lights can lead to dangerous riding situations, falls, accidents and material damage.

- **Contact your specialist bicycle dealer immediately if you notice the slightest malfunction.**
- **You should only use your EPAC again when it has been properly repaired by the specialist bicycle dealer.**

Malfunction	Possible cause(s)	Remedy
Noises: cracking, banging, grinding, etc.	Mudguard or luggage rack parts loose	Contact your specialist bicycle dealer immediately.
Lights partially or completely without function	Light fixtures (bulbs, LEDs) burned out	Replace the bulb(s) Contact your specialist bicycle dealer.
	Cables damaged	Contact your specialist bicycle dealer immediately.
	Dynamo defective	

15.5 Wheels and tyres

⚠ WARNING
Danger from falls and accidents
Defects and faults in the wheels and tyres can lead to dangerous riding situations, falls, accidents and material damage.

- **Contact your specialist bicycle dealer immediately if you notice the slightest malfunction.**
- **You should only use your EPAC again when it has been properly repaired by the specialist bicycle dealer.**

Malfunction	Possible cause(s)	Remedy
Wheels “jump”	• Tyre damaged • Spoke broken	Contact your specialist bicycle dealer immediately.
Noises: cracking, banging, grinding, etc.	Foreign matter has become trapped in the wheel	Remove the foreign matter. Use your EPAC very carefully after this. Have your EPAC checked in an approved workshop for possible consequential damage.
	Damage to the wheel	Contact your specialist bicycle dealer immediately.
“Spongy” riding behaviour	Tyre pressure too low	Increase the air pressure (see *section 6.1.2*). If the same riding behaviour occurs again fairly shortly thereafter, the tyre has a slow puncture (see next line).
• Increasingly “spongy” riding behaviour • Very unusual wheel rolling behaviour (you feel every small stone)	Flat tyre	Flat tyre: Replace the inner tube, also the tyre and rim tape if necessary, see *section 15.5.1.*

15.5.1 Flat tyre

⚠ WARNING Danger from falls and accidents
Errors during repairs can lead to dangerous riding behaviour.
You should carry out these repairs yourself only if you have the necessary tools.

In order to repair a flat tyre you need the following equipment/tools:

- **2 tyre irons**
- **Inner tube (new) with Sclaverand valve for tyre size 28 x 1.75**
- **Tyre (new), if necessary**
- **Air pump with pump head suitable for the valve**

1. Remove the wheel.
   See *section 13.1.1, Dismantling the* front wheel or *13.1.3, Dismantling the* rear wheel .
2. Unscrew the valve nut as far as it will go.
3. Press the valve with your finger until all of the residual air has escaped.
4. Remove the nut from the valve base.
5. Lift the tyre off the rim using the tyre irons. Begin on the side opposite the valve.
6. Pull the inner tube out of the tyre. Note the direction of the inner tube in the tyre.
7. Look for the cause of the flat tyre:
   - Pump up the damaged inner tube.
   - Search for the point where the air is escaping.
   - When you have found the leak:
     turn the inner tube in on itself so that the valve is pointing inwards.
8. If the leak is on the inside:
   - Check that the rim tape is positioned correctly:
     All spoke holes must be covered.
     If this is not the case, please contact your specialist bicycle dealer.
   - Check the rim for damage (sharp edges, chippings etc).
     If you find such damage, please contact your specialist bicycle dealer.
   - Check whether there are one or two small holes next to each other.
     NOTE:
     Two small holes indicate a puncture (snakebite). This is a frequent cause

when riding over sharp-edged obstacles with too little air pressure.
If the rim is not damaged: Install a new inner tube.

9. If the leak is on the outside:

   - Hold the inner tube next to the rim with a tyre, as it was mounted. Check the area of the tyre where the hole is located in the inner tube. Often there is a thorn, a small stone or glass splinter in the tyre.
     ⚠ CAUTION Danger of cuts
     If you feel the inside of the tyre with your thumb or finger, you might cut yourself on sharp-edged objects if these are still in the tyre.
     - **Avoid moving your thumb and fingers quickly along the inside walls of the tyre.**
     - **You should feel the walls of the tyre with extreme caution.**

10. Remove the item causing the problem carefully with your fingernail, penknife or similar item. If the tyre has been damaged or cut over a large area, it also has to be renewed.

If a tyre change is needed:

1. Remove the old tyre completely from the rim.
2. Mount the new tyre with one side on the rim. Make sure that the arrow indicating the direction of movement on the tyre is pointing in the direction of rotation when the EPAC is ridden.

If no tyre change is needed:

1. Pump up the new inner tube somewhat, so that it takes on its final shape.
2. Insert the valve through the valve hole in the rim. The valve must be pointing towards the middle of the wheel.
3. Now press the side of the tyre which is still outside the rim into the tube protector at the level of the valve.
4. Press the external sides of the tyre into the tube protector at the same time around the circumference. Start at the valve.
5. Opposite the valve the force required to press the tyre in may be greater. Use the tyre irons for this. Make sure that you do not damage the inner tube.
6. Pump up the inner tube slightly.
7. Move the tyre to and fro around the circumference at right angles to the direction of travel. Ensure that the tyre is positioned evenly on the rim and that the inner tube is not visible at any point.
8. Inflate the tyre up to the prescribed air pressure (see tyre wall).
9. Mount the wheel in accordance with *section 13.1.2, Install the front wheel* or *13.1.4, Install the rear wheel.*
10. Check the tyres.
    See *section 6.1.2, Checking the tyres*.

15.6 Electric drive

Malfunction	Possible cause(s)	Remedy
No display	Display not correctly attached	Remove the screen and attach it again (see *BOSCH instructions)*
	Rechargeable battery pack flat	Charge the battery pack (see *BOSCH instructions)*
	Rechargeable battery pack broken	Please contact your specialist bicycle dealer.
	Cables damaged	Please contact your specialist bicycle dealer.
Rechargeable battery pack cannot be charged up	Cables not or incorrectly connected	Make sure that all connections are correct
	Cables damaged	Please contact your specialist bicycle dealer.
	Rechargeable battery pack broken	Please contact your specialist bicycle dealer.
	Charging device broken	Please contact your specialist bicycle dealer.
Drive not working	Fault in the control system	Please contact your specialist bicycle dealer.
	Rechargeable battery pack flat	Charge the battery pack (see *BOSCH instructions)*
	Rechargeable battery pack broken	Please contact your specialist bicycle dealer.
	Cables damaged	Please contact your specialist bicycle dealer.
	Speed is over 25 km/h	The drive is designed to switch off at speeds over 25 km/h.
Drive does not supply enough power	Control system fault	Please contact your specialist bicycle dealer.
	Rechargeable battery pack almost flat	Charge the battery pack (see *BOSCH instructions)*
	System not calibrated correctly	Turn off the drive and turn it on again - without placing a load on the pedals
	Motor temperature too high due to excessive load	Stop at an appropriate location and wait until the motor has cooled down. Otherwise the power of the drive is reduced until the motor temperature has gone down of its own accord.
Drive starts unintentionally	If you place your foot on the pedal and move the wheels slightly, the electric drive will start up.	**- You should only put your foot on the pedal when you actually want to move off.** **- Always operate both brakes in a stationary position and only release them when you actually want to move off.**

16 Taking the EPAC out of operation

NOTE:
The incorrect storage of your EPAC can damage the bearing, tyres and rechargeable battery pack and promote corrosion. Store your EPAC in accordance with the following specifications if you are not going to use your EPAC for longer than 2 months.
The ambient temperature in the storage location must be between -10℃ and +50℃.

It is essential to read the information on this in the enclosed BOSCH original operating instructions.

1. Clean and maintain your EPAC as described in *section14.2 , How to clean and care for your* EPAC.
2. Charge up the rechargeable battery pack.
   See *attached BOSCH original operating instructions.*
3. Store your EPAC only in dry rooms where it is not exposed to dust.
4. Use suitable bike stands (e.g. tripod).
   Consult your specialist bicycle dealer on this.
5. If your EPAC is standing with one or both wheels on the floor:
   - Lift your EPAC every 2-3 weeks and turn the wheels a few rotations by hand.
   - Move the handlebars back and forth a few times.
   - Turn the crank by hand a few revolutions in the opposite direction to the drive.
6. Before you put the EPAC back into service:
   - Charge up the rechargeable battery pack completely.
   - Carry out the checks in accordance with *section 6, Before Every Use*.

17 Disposing of the EPAC

Like all electrical and electronic equipment, your EPAC contains substances which are harmful to the environment and human health, as well as materials which can be reused and recycled. In the European Economic Area (EEA) you are therefore obliged to keep your EPAC separate from the domestic waste and make use of a return and collection system.

Dispose of your EPAC at a local authority collection point. Detailed information on the correct disposal of your EPAC can be obtained from your local authority or your specialist bicycle dealer.

Tyres and inner tubes can be disposed of in the domestic waste.

18 Appendix

18.1 Warranty

The legally prescribed warranty period of two years applies in all cases to your EPAC. If a defect should occur to your EPAC within this period, please contact the specialist bicycle dealer where you bought your EPAC.

18.2 Guarantee

In addition to the statutory warranty, the firm GHOST-Bikes provides a durability guarantee of five years, provided that you - as the end-customer - complete the guarantee card accompanying your EPAC and sends it to the firm GHOST-Bikes. Alternatively, you can complete an online registration on the GHOST website. The guarantee period begins with the purchase of the EPAC by you as the end-customer from an authorised dealer. If the guarantee card is not returned to the firm GHOST-Bikes or the EPAC is not registered online, no guarantee will apply. This guarantee does not infringe your warranty entitlements.

The guarantee applies only to the frame construction and not to the paintwork and decoration.

The guarantee does not cover:

- **faults and damage attributable to a failure to observe the instructions and tips given in the user manual.**
- **faults and damage attributable to force majeure, accident, improper use, incorrectly performed repairs, lack of maintenance and care or to wear and tear.**
- **faults and damage attributable to original spare parts not being used when replacing parts.**
- **changes to the product without the prior agreement of the firm GHOST-Bikes, insofar as defects and damage are attributable to these.**

In the event of a complaint within the above guarantee period but outside the statutory warranty period, only the defective frame will be repaired or replaced. Costs for any necessary modification of components or for sending a frame within the specified period will not be assumed or refunded. The affected frames should therefore be dismantled and sent postage paid to the firm GHOST-Bikes. In cases where the frame is replaced within the guarantee period, the guarantee period begins again for the new frame from the time of replacement.

Should a frame of the same type no longer be available if it becomes necessary to replace a frame, GHOST-Bikes reserves the right to supply an alternative frame which may differ in form and colour from the original frame, but which is of an equal or higher quality.

The warranty entitlements continue to apply alongside this guarantee.

18.3 EC Declaration of Conformity

GHOST
GERMAN BICYCLE TECHNOLOGY

CE Original EG-Konformitätserklärung
Original EC – Declaration of Conformity

Hersteller / *manufacturer:*

Bezeichnung / *description*:	GHOST-Bikes GmbH	Anschrift / *address*:	An der Tongrube 3 95652 Waldsassen Germany

Produkt / *product:*

Bezeichnung / *description*:	EPAC
Modell / *model*:	E-Hybride CR 4000 / 9000 incl. Lady E-Hybride TR 4000 / 9000 incl. Lady E-Hybride Wave 4000 / 9000

Der Hersteller erklärt hiermit, dass die oben aufgeführten Produkte allen relevanten Bestimmungen folgender EG-Richtlinien entspricht. / *Herewith the manufacturer declares, that the product listed above are conform to relevant regulations of the following EC-directives:*

- Richtlinie 2006/42/EG / *directive 2006/42/EG*
- Richtlinie 2004/108/EG / *directive 2004/108/EG*

Folgende harmonisierte Normen wurden vollständig angewendet / *The following harmonized standards have been fully applied:*

Gemäß Richtlinie 2006/42/EG / *according to directive 2006/42/EG*

- EN 12100

Gemäß Richtlinie 2004/108/EG / *according to directive 2004/108/EG*

- EN 61000-3-2
- EN 61000-3-3
- EN 61000-3-11
- EN 61000-6-1
- EN 61000-6-3

Folgende nationalen Normen und sonstigen Spezifikationen (oder Teile daraus) wurden angewendet. / *The following national standards and other specifications (or parts thereof) have been applied:*

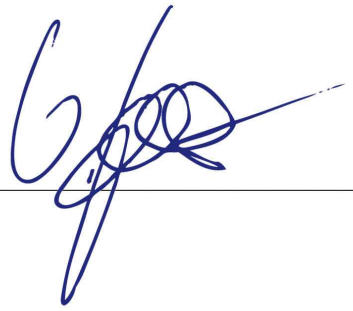
- EN 15194
- EN 14764

Person, die bevollmächtigt ist, die technischen Unterlagen zusammenzustellen. / *Person who is authorized to compile the technical documents:*

Name / *name*:	Kropf, Thomas	Anschrift / *address*:	An der Tongrube 3 95652 Waldsassen Germany

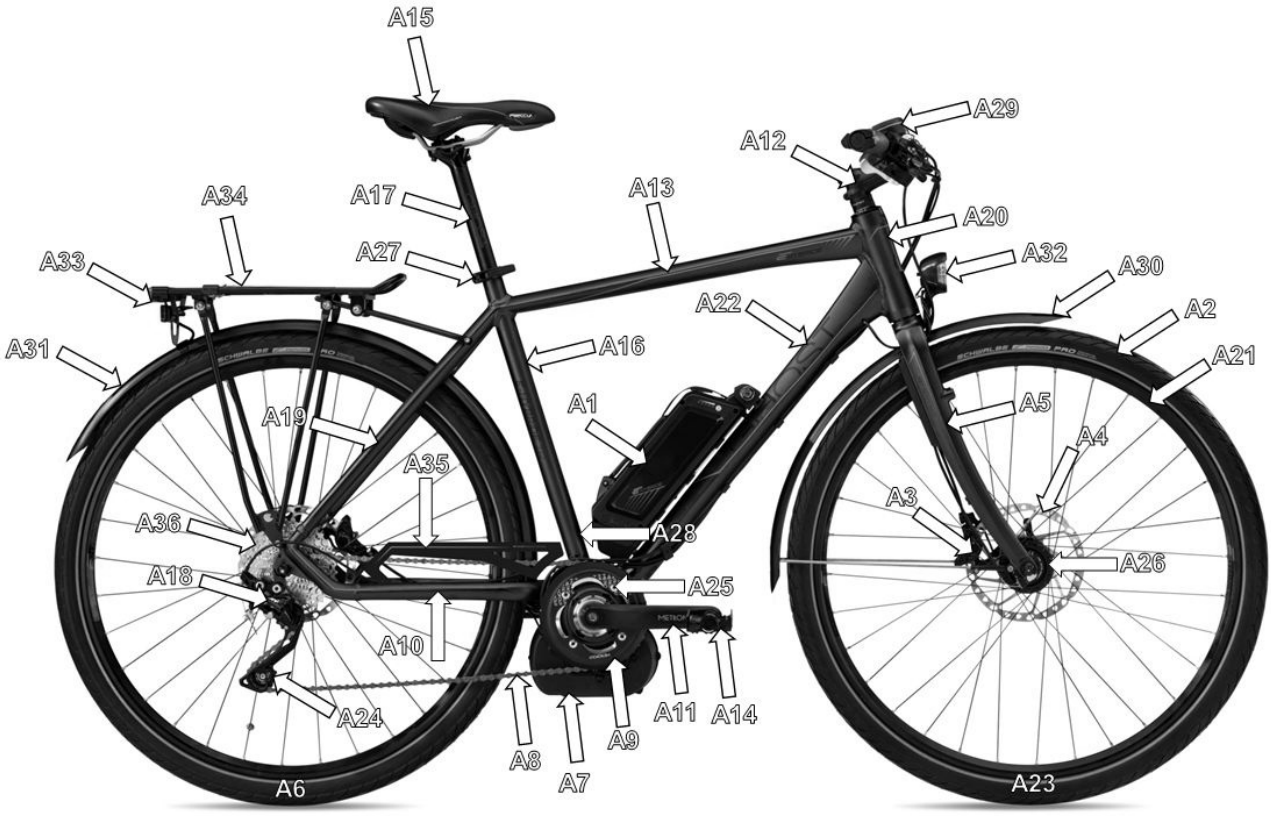
Unterzeichner / *signer:*

Ausstellungsort / *place of issue:*	Waldsassen
Ausstellungsdatum / *date of issue:*	31.01.2013
Funktion des Unterzeichners im Unternehmen / *Position of the signer in the company:*	Technical Senior Manager
Name des Unterzeichners / *name of the signer:*	Zrenner, Udo
Unterschrift / *signature:*	



18.4 Illustrations

- **Illustration A**



- A1: Rechargeable battery / battery pack
- A2: Tyres
- A3: Brake calliper
- A4: brake disc
- A5: Suspension fork / fork
- A6: Rear wheel
- A7: Motor
- A8: Chain
- A9: Chainring
- A10: Chain stay
- A11: Crank
- A12: Handlebar stem, stem
- A13: Top tube
- A14: Pedal
- A15: Saddle
- A16: Seat tube

- A17: Saddle support
- A18: Dérailleur
- A19: Seat stay
- A20: Head tube
- A21: Rim
- A22: Down tube
- A23: Front wheel
- A24: Rear derailleur wheel
- A25: Chainring screw
- A26: Hub, front, front wheel hub
- A27: Seat clamp screw(s)
- A28: Type plate (on the seat tube)
- A29: Display (mounted on the handlebars)
- A30: Front mudguard
- A31: Rear mudguard
- A32: Headlight (front light)
- A33: Back light (rear)
- A34: Luggage rack
- A35: Chain guard / chain case
- A36: Cassette / sprocket set

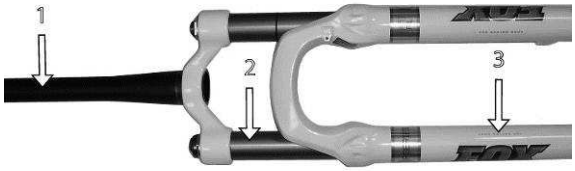
- **Illustration B**

- B1: Brake lever
- B2: Grip (handlebar grip)
- B3: Headset
- B4: Handlebars

- **Illustration C**

- C1: Gear cable
- C2: Dropout
- C3: Derailleur hanger

- **Illustration D**



- D1: Fork steering tube
- D2: Fork tube
- D3: Dip tube

- **Illustration E**

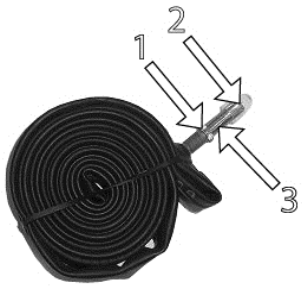
- E1: Seatpost clamp bolt
- E2: Seatpost clamp, clamp

- E3: Quick-release axle
- E4: Quick-release lever

- **Illustration F**

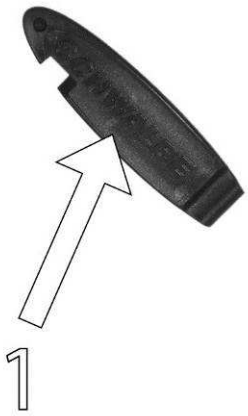
- F1: Click pedal
- F2: Switch, gear lever

- **Illustration G**



- G1: Valve nut
- G2: Valve cap
- G3: Valve
- G4: Inner tube

- **Illustration I**



- I1: Tyre lever (appearance varies according to manufacturer)

About us

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